HEALTH BELIEFS AS PREDICTORS OF PARENT-TEEN COMMUNICATION ABOUT PREGNANCY, SEXUALLY TRANSMITTED DISEASES, SEXUAL RESPECT, AND SEXUAL MORALITY

By

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The present research effort tested the applicability of a preventive health behavior model to the arena of parent-teen communication about sexual issues. The Health Belief Model views health behavior as being determined by perceived

- barriers to taking an action,
- benefits of engaging in an action,
- efficacy in performing an action,
- severity of a threat's consequences, and
- susceptibility to a threat.

This study conceptualized parent-teen communication about sexual issues as a preventive health behavior and sought to determine the utility of the Health Belief Model in understanding parent-teen communication about pregnancy, sexually transmitted disease, sexual respect, and sexual morality.

Data from Wave I of the 1995 National Longitudinal Survey of Adolescent Health were used to test hypotheses. The subjects of this study were 6,504 parents whose

adolescent children participated in the at-home segment of the Add Health study. The unit of analysis is the parent.

Bivariate and multivariate analysis indicate that parental beliefs about barriers, benefits, efficacy and susceptibility contribute to parent-teen communication about pregnancy, sexually transmitted diseases, sexual respect, and sexual morality. However, parental perception of severity is only a significant predictor of communication about sexual morality, and not communication about pregnancy, sexually transmitted diseases and sexual respect.

The Health Belief Model appears to be useful in understanding parental involvement in the sexual socialization of youth. In addition, the results suggest that the application of the HBM may be expanded to explain the behaviors taken by one person in an effort to promote the health of another.

INTRODUCTION

Statement of the Problem

Most American adolescents are sexually active (Strunin & Hingson, 1992; Wilson, 1994). In a random digit-dial telephone survey of 16- to 19-year-olds, 66% of the respondents reported experiencing sexual intercourse at least once. Indeed, adolescents engage in a wide variety of sexual practices including digital, vaginal, oral, and anal sex. Moreover, most teens have participated in such behaviors with multiple partners (Rosenthal & Feldman, 1999).

The high rate of teen pregnancy in the U.S. provides evidence of widespread unprotected sex in this population. Between 1970 and 1990, the teen pregnancy rate doubled (Bowler et al., 1992; Stine, 1996). The National Academy of Sciences report that each year more than one million teenage girls become pregnant. Of these, just over 400,000 have abortions, and almost 470,000 give birth outside of wedlock (Strunin & Hingson, 1992). When compared to women who delay childbearing past the teen years, teen mothers are more likely to drop out of high school, work at low-income jobs experience longer periods of unemployment, receive welfare benefits, be single parents, and live in poverty (Bissell, 2000).

Another indicator of the prevalence of unprotected sex among youth lies in the high rate of sexually transmitted disease in this population (Hein, 1993). Every 30 seconds an American teen is infected with some STD (Stine, 1996). Even more, adolescents have the highest rates of gonorrhea, syphilis, Chlamydia, and Pelvic

Inflammatory Disease when compared to all other age groups in the United States (Bowler et al., 1992). The incidence of teen HIV infection is also disproportionate. While persons between the ages of 13 and 19 years old make up only 15% of the American population (Hooyman & Kiyak, 1993), 25% of all cases of HIV infection in the United States occur within this age group (Mann & Tarantola, 1996).

Taking these statistics into account, it is not surprising that American adolescents lack adequate information about human sexuality, reproduction, STDs, and pregnancy prevention (Hockenberry-Eaton et al., 1996). In a study of 1,033 male and female teenagers, students correctly answered an average of only 11 items on a 20-item test of sexual knowledge (Leland & Barth, 1993). Similarly, Carver et al. (1990) found that 10^{th} to 12^{th} grade students were only able to answer an average of 12 items correctly on a 30-item true/false test of sexual knowledge. These findings suggest that teens are confused about the effectiveness of various types of contraception and have major misunderstandings concerning the conditions under which they might become pregnant or contract a sexually transmitted disease. Because of this ignorance, many teens are unable to engage in meaningful dialogues with their partners about pregnancy prevention and STD protection before engaging in sexual intercourse (Simanski, 1998).

Fortunately, teens desire more information about sex and sexuality. In a statewide study of teenaged girls, researchers found that 97% of the respondents wished that their mother had provided them with more information on at least one sexual topic. and 87% desired more information from their father on at least one sexual topic (Hutchinson & Cooney, 1998). In a nationwide study of 1,000 adolescents, 44% wanted to know more about how to talk with their parents about sex and relationships (Hollander, 1999).

Parental interest in educating their children about sexual issues is widespread. Abramson et al., (1983) reported a strong desire among parents to be actively involved as a source of sex-related information for their children. In fact, most parents feel that they should be the primary providers of sexual information (Mueller & Powers, 1990; Rosenthal & Feldman, 1999). A survey of parents of school-age children revealed that most wish to do better than their parents in discussing sex with their own children (Geasler et al., 1995).

Because of the prevalence of adolescent sexual activity, pregnancy, and sexually transmitted diseases, there is an increased need for family commitment to healthy adolescent sexual development (Hutchinson & Cooney, 1998). Both parents and teens appear to be open to improvements in the area of family communication about sexual issues.

Statement of Purpose

The current study examines predictors of parent-teen discussions about sex. The Health Belief Model (Becker, 1974a) provides the foundation for this research project. The HBM suggests that the likelihood that a preventive action will be taken is based on perceptions of

- barriers to taking an action,
- benefits of engaging in an action,
- efficacy in performing an action,
- severity of a threat's consequences, and
- susceptibility to a threat.

In applying the model to parent-teen communication about sexual issues, it is predicted that engaging in informative parent-teen discussions about sex depends first on a parent's belief that few obstacles exist to such discussions (barrier). Second, the parent must

believe that parent-teen communication about sex reduces the teen's sexual risks (benefit). Third, the parent would have to feel self-efficient or believe that he/she has the skills to communicate about sexual issues with the teen (efficacy). Fourth, the parent must perceive the consequences of the teen's sexual behavior to be severe or have significant medical, social, and/or emotional consequences (severity). Finally, the parent must perceive his/her child to be at risk for the unwanted consequence(s) of sexual activity (susceptibility).

The current study compares parents who discussed sexual issues with their teens to parents who did not, across several belief measures. The sexual issues of interest are pregnancy, sexually transmitted disease, sexual respect and sexual morality. The belief measures investigated include

- barriers to talking to their children about sex,
- benefits of parent-teen communication about sex,
- self-efficacy in engaging in discussions,
- severity of sexual consequences for teens, and
- teen susceptibility to the unwanted consequences of sex.

Research Questions

The research questions that are addressed in this study are listed below.

- What is the reported prevalence of parent-teen communication about pregnancy, sexually transmitted diseases, sexual respect, and sexual morality?
- What is the relationship between parental health beliefs (barriers, benefits, efficacy, severity) and parent-teen communication about sexual issues (pregnancy, sexually transmitted diseases, sexual respect, and sexual morality)
- Does the Health Belief Model adequately explain parent-teen communication about pregnancy, sexually transmitted diseases, sexual respect, and sexual morality?
- Can the Health Belief Model be broadened to explain preventive behaviors that are taken on behalf of others?

Definitions of Essential Terms

Terms specific to this study are defined as follows:

Sexual socialization is a process through which children are provided with the skills, values, and attitudes that are needed to be sexually healthy members of society.

Parent-teen communication refers to discussions between a parent/guardian and his/her custodial child between the ages of 12 and 21.

Sexual issues are topics that relate to the teen's sexuality. These include pregnancy, sexually transmitted diseases, sexual respect, and sexual morality.

Perception is a term used to include beliefs. Included in perceptions are a parent's ideas and assessments.

Barriers are obstacles that prevents or limits parent-teen communication about sexuality. For the purpose of this study, barrier is operationally defined as the parent's perception of teen embarrassment as a result of discussing sexual issues.

Benefits refer to the parent's perception of the gain that result from parent-teen sexual dialogue. Benefit is operationally defined as the parent's belief that parent-teen sexual discussions provide teens with information that may have otherwise been unavailable.

Efficacy refers to one's beliefs about his/her ability to carry out a specific behavior It is operationally defined as a parent's self-evaluation of his/her ability to effectively discuss sexual issues with the teen.

Severity is an individual's assessment of the consequences that result from teen sexual behavior. In this study, severity is operationally defined as the parent's level of disapproval of his/her teenaged child's sexual activities.

Susceptibility is a subjective evaluation of how the parent views his or her child's sexual risk. It is operationally defined in this study as the parent's perception of the child's level of sexual activity.

Hypotheses

The hypotheses for this study are as follows:

- A negative relationship exists between parental perceptions of barriers to parent-teen discussions and parent-teen discussions about A) pregnancy, B) sexually transmitted diseases, C) sexual respect, and D) sexual morality.
- A positive relationship exists between parental perceptions of the benefits of parent-teen discussions and parent-teen discussions about A) pregnancy, B) sexually transmitted diseases, C) sexual respect, and D) sexual morality.
- A positive relationship exists between parental perceptions of personal efficacy in discussing sexual issues and parent-teen discussions about A) pregnancy, B) sexually transmitted diseases, C) sexual respect, and D) sexual morality.
- A positive relationship exists between parental perceptions of the severity of teen sexual risks and parent-teen discussions about A) pregnancy, B) sexually transmitted diseases, C) sexual respect, and D) sexual morality.
- A positive relationship exists between parental perceptions of teen's susceptibility and parent-teen discussions about A) pregnancy, B) sexually transmitted diseases, C) sexual respect, and D) sexual morality.
- The Health Belief Model significantly predicts parent-teen communications about A) pregnancy, B) sexually transmitted diseases, C) sexual respect, and D) sexual morality.

Assumptions

There are two main underlying assumptions in the present study. First, it is assumed that humans are rational decision-makers who take actions based on their beliefs (Airhihenbuwa & Obregon, 2000). Parents who discuss sexual issues with their teens are believed to have considered the benefit and costs of such talks. The decision to talk is not a random action, but is based on a parent's calculated effort to benefit their child.

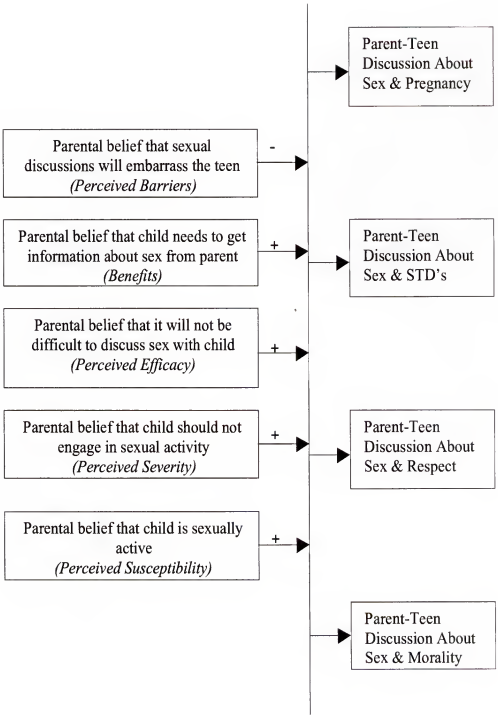

Figure 1. Hypothesis

The second main underlying assumption is that parent-teen communication about sexual issues is health communication. Parents who discuss sexual issues with their children are assumed to be providing their teens with vital health information and encouraging them to participate in healthy behaviors and lifestyles. Such communication is one form of sexual socialization.

Significance of the Study

The significance of this study is found in its potential

- contribution to our understanding of family socialization processes within the structural-functional perspective,
- expansion of the Health Belief Model,
- presentation of data currently lacking in the literature, and
- implications for policy.

Structural-Functionalism and Socialization

The study of how parental beliefs contribute to parent-teen communication about sexual issues furthers our understanding of the processes involved in family socialization. The structural functionalist perspective views society as a set of interrelated structures or parts, with each structure contributing toward the maintenance and stability of society. Family is one structure that fulfills necessary societal functions. Universal family functions, or functions that the family has always carried out in every society, include reproduction, economic cooperation, legitimization of sexual relations and socialization (Aberle, 1950; Murdock, 1949). Parent-teen communication about sexual issues is one form of socialization.

According to Parsons and Bales (1955), the socialization of children is one of the most basic family functions. Socialization involves teaching children the language, knowledge, attitudes, values and social skills that are necessary to function effectively in

society. A large part of the socialization process involves direct communication (Aberle, 1960). With proper socialization, members of society gain an understanding of what is expected of them and behave accordingly. The structural functionalist perspective holds that the social system functions smoothly only when persons adequately fulfill society's expectations.

Parent-teen communication about sexual issues is a form of sexual socialization because it transmits cultural values and norms for the maintenance of society. It involves an effort to prepare children be sexually healthy. According to Hedgepeth and Helmich, (1996) sexually healthy people

> appreciate their own bodies, interact with both genders in appropriate and respectful ways, express love and intimacy in appropriate ways, avoid exploitative relationships, recognize their own values and respect people with different values, take responsibility for and understand the consequences of their own behavior, enjoy sexual feelings without necessarily acting on them, communicate effectively with family, friends and partners, talk with partners about sexual activity before it occurs, use contraception effectively, practice health prevention, understand the impact of media and peer messages and seek further information about sexuality as needed. (p. 3)

When members of families and society alike are sexually healthy, the likelihood of sexual risk-taking, unwanted pregnancy, sexually transmitted disease, abandoned children, low self-esteem, promiscuity, sexual crimes and sexual immorality is reduced. These consequences benefit the individual, families as well as society at large. As such, sexual health is considered functional for the entire social system.

Michel Foucault's discussion in the History of Sexuality (1978) sheds some light on how parent-teen communication about sexual issues surfaced as a method of sexual socialization. Foucault suggested that conversations about sex are the result of society's

fixation with sex as a moral, political, legal, economic, educational, spiritual and medical issue. According to Foucault, concerns about population growth, child sexuality, mental illness, sexual crimes, sexually transmitted disease and genetic purity led to a conceptualization of sex as an issue that needed to be policed. Society was thought to need protection from the dangers of uncontrolled sexuality, particularly among children. Communication about sex served as, and continues to serve as, a form of social control. Family became a major player in sexual dialogues in an attempt to maintain and preserve society. Because families serve as a base of power and knowledge, parents are in a unique position to observe, advise, and regulate their children's sexual behavior.

That parents are expected to prepare their children for socially acceptable sexual relations is indicated by recommendations recently made by the United Nations. The Joint United Nations Programme on HIV/AIDS recommended parent-child communication about sexual issues as one of the main strategies for preventing HIV/AIDS (Joint United Nations Programme on HIV/AIDS, 2000). The UN has funded television shows, radio programs and parent-education programs in an effort to launch parent-child dialogue about sex and AIDS.

Indeed, parent-teen discussions about sexual issues encourage safer-sex practices among teens (Fox, 1983) and is an effective form of sexual socialization. Research suggests that youth who receive at home instruction experience a later sexual debut (Pick & Palos, 1995), have fewer pregnancies (Leland & Barth, 1993), have fewer sexual partners, are less likely to engage in unprotected sex (Holtzman & Rubinson, 1993), and are more comfortable discussing sexual issues with their partners.

Nevertheless, many aspects of the sexual socialization function of family have been shifted to other institutions (Edwards, 1967; Reiss, 1965). A large proportion of teens report that sex education in school, various sources of media, and peers are their major source of sex information (Ansuini et al., 1996; Whalen et al., 1996). One explanation for parental neglect in their sexual socialization duties may be apathy. According to Aberle (1950), apathy refers to the "cessation of individual motivation. The condition affects some members to some extent in all societies and large numbers in a few societies" (p. 103). In the present study, parental beliefs serve as indicators of parental motivation to discuss sexual issues with their teens. The study's model suggests that parents with certain beliefs will have higher levels of apathy than those without such beliefs. Knowing whether parental beliefs predict parent-teen communication answers the sociological question, "Why are some parents motivated to be involved in the sexual socialization of their children while others are not?"

Expansion of the Health Belief Model

Parent-child communication about sexual issues is also conceptualized as health preventive communication in the present study. According to Maibach (1995), health communication is the "use of communication techniques and technologies to (positively) influence individuals, populations, and organizations for the purpose of promoting conditions conducive to human and environmental health" (p. 220). Health communication, in turn, is a specific type of health behavior. According to Gochman (1982), health behaviors refer to "actions, and habits that relate to health maintenance, to health restoration and to health improvement" (p. 167). The model tested in this study assumes that when parents discuss pregnancy, sexually transmitted diseases, sexual

morality and sexual respect with their teens, they are doing so in an effort to inform and move their children to participate in sexually healthy behaviors and lifestyles. In this vein, parent-teen communication is concerned with maintaining physical, sexual, and social health and avoiding the unwanted medical, social, and emotional consequences of sexual activity.

Most studies that tested the Health Belief Model focused on explaining health behavior taken on behalf of self. Investigations employing the Health Belief Model were successful in their aim of predicting or explaining the level of preventive health behaviors. Two evaluative investigations, which together covered 46 different studies using the model, found it to have significance in the degree of association of its principal components with almost every sick-role and preventative behavior under study (Becker et al., 1977; Janz & Becker, 1984). However, much of the research served only to substantiate and refine the basic parameters set by Becker (1974). Findings that are significant to the expansion of the theory's generality are lacking. This study is aimed at applying the Health Belief Model to actions taken by parents to promote or maintain the health of their children by engaging in health communication. Whether or not a more abstract interpretation of the theory can explain health-promoting behavior taken on behalf of another individual is questioned.

In a quest to understand the effects of parental involvement on adolescent sexual behavior, literature has mainly focused on the benefit of parent-child communication (Fisher, 1988; Fox & Inazu, 1980; Newcomer & Udry, 1984; Sanders & Mullis, 1988; Walters & Walters, 1983). Even more, much of the research on parent-teen communication lacks a theoretical foundation. The present study conceptualized parent-

teen communication about pregnancy, sexually transmitted diseases, sexual respect, and sexual morality as health-preventive. It was assumed that parents discuss such issues with their children in an attempt to contribute to their child's healthy sexual socialization. The goal here was to test the applicability of the Health Belief Model to parent-teen discussion about sexual issues.

Research Gaps

This study provides statistical data that are currently absent in the body of literature concerned with contemporary parenting and family communication. Existing studies on parent-adolescent communication about sex have several shortcomings. First, most studies of parent-teenager communication provided only a global assessment of discussion, without offering data on the specific topics discussed (Jaccard & Dittus, 1993; Miller et al., 1998; Rafaelli et al., 1998). This approach fails to recognize that the question, "Have you discussed sex," may have different meanings for different people. Pregnancy, sexually transmitted disease, menstruation, puberty, birth control, sexual morality, abstinence, and sexual respect are just a few topics that might fall under such a broad question. This study provides data on specific areas of sexual communication. Four different topics of sexual communication (pregnancy, sexually transmitted disease sexual respect, and sexual morality) were examined.

To date, there is no consensus on which topics are most often discussed in the home. Some have suggested that parents are more likely to focus on biological topics than on sexual decision-making topics (Baldwin & Baronoski, 1990). In a study of 249 female, adolescent, family-planning patients, findings suggest that families are most likely to discuss topics related to puberty, menstruation, the biology of pregnancy, and

abstinence (Pistella & Bonati, 1998). Other studies, however, have suggested that families are most likely to discuss the responsibilities of being a parent, sexually transmitted diseases, and contraceptives (Dilorio et al., 1999; Jordan et al., 2000; Miller et al., 1999). Rosenthal and Feldman (1999) divided sexual communication into four domains: sexual safety, development, societal concerns, experiencing sex, and solitary sexual activity. They found that of the four domains, families are most likely to discuss sexual safety. Few studies have focused on singular types of discussions within the family, whereas the present study provides data on specific areas of communication that have been neglected in the literature: the unwanted consequences of sexual activity. Discussions on pregnancy, sexually transmitted diseases, sexual respect, and sexual morality were examined. Findings provided information on which is most likely to be discussed.

Another methodological limitation in the literature is that the samples used by most researchers investigating parent-child communication about sexual issues are small (Kirby, 1999). The present study employed data collected from the 1995 National Longitudinal Survey of Adolescent Health. Data on parent-teen communication about four sexual consequences was garnered from 6,504 diverse parents (Udry, 1996).

Still another limitation in the literature is the lack of attention given to parental beliefs as predictors of parent-teen communication about sexual issues. Fisher (1988) pointed out that there are few studies that explain why some parents talk to their children about sex while others do not. Most research on the role of parents in sexual socialization focused on the effect of communication on teen sexual behavior (Dittus et al., 1999; Fisher, 1998; Jaccard & Dittus, 1993, Jaccard & Dittus, 2000) or identifying demographic

predictors of parent child communication about sex (Jaccard & Dittus, 1993; Rafaelli et al., 1998). In fact, Rafaelli et al., (1998) suggested that research on the predictors of parent-teen communication should focus on parental beliefs. The goal of the present study was to identify previously neglected predictors of parent-child sexual communication, including parental beliefs about a barrier to discussion, benefit of communication, efficacy, the severity of consequences of child sexual activity, and teen susceptibility. Information on the relationships between health beliefs and sexual communication can promote involvement by modifying health beliefs.

Finally, research focusing on specific strategies that parents use to motivate their children to avoid sexual risk is lacking (Jaccard & Dittus, 1983). Conveying information to teens about the adverse consequences of engaging in premarital sex is one strategy to encourage teen physical, economic, and social health. Discussing such consequences is very different from discussing, for example, menstruation. Much of the literature on parent-teen communication about sexual issues focuses on general areas of sex as opposed to motivational types of communication.

Policy Relevance

The policy implications of a relationship between parental beliefs and parent-teen communication about sex also warrant this study. An understanding of whether parental beliefs contribute to parent-teen discussions may provide a foundation on which to build programs promoting increased at-home communication about sexual issues (Raffaelli et al; 1998). If parental beliefs are a significant predictor of parent-teen communication about sex, then findings can be used to develop programs and policies to alter parent beliefs about sex to increase family communication about this important topic. Research

suggests that health education efforts are quite effective in modifying health beliefs (Rosenstock, 1974). Programs to alter the health beliefs of parents may be effective in significantly reducing teen sexual risk taking.

LITERATURE REVIEW

This review of literature includes information on the reported prevalence and predictors of parent-teen communication about sex.

Prevalence of Parent-Teen Communication about Sexual Issues

Although both teens and parents are interested in more family communication about sexual issues, inconsistencies in the reported prevalence of parent-teen talks about sex are apparent (Miller et al., 1998; Nolin & Petersen, 1992). In an important study on parent-teen communication about sexual behavior, Newcomer and Udry (1985) found that teen reports of whether parent-teen communication had taken place showed relatively little correspondence to parental reports of such communication. While 75% of mothers said they had talked to their sons about sex, only 33% of the sons reported they had engaged in such conversations with their mothers. Similarly, in a study that surveyed mothers and children on maternal disapproval of adolescent sexual behavior and actual adolescent sexual behavior, 72% of the mothers reported discussing sex with their teen, but only 45% of the teens reported discussing sex with the mother (Jaccard et al., 1998).

Jaccard and Dittus (1991) found that less than 25% of teens between the ages of 12 and 16 years old had discussed sexual issues with their parents. However, most of the parents participating in the 1989 National Health Interview Survey reported discussing sexual issues with their children (CDC, 1991). Consistency on reports of the

prevalence of sexual discussions in the home is lacking. Perhaps, what is meant by parent-teen communication differs for youth and their parents.

Indeed, the sources of information (parent or child) and the measures used to gauge the prevalence of parent-teen communication about sex impacts the prevalence rates generated. Using a statewide sample of young women, Hutchinson and Cooney (1998) found different rates of prevalence of sexual discussions, based on the question asked. In response to the global question "In general, how much information did your mother share with you about human sexuality?" most respondents (73.8%) reported that their mothers had provided them with at least some information. However, when asked about communication on specific topics, the percentages were much lower. For instance, only half of the respondents reported that their mothers had provided at least some information on STDs, HIV infection, and condoms.

Even with the varying reports of family communication about sexual issues, it is safe to conclude that parents are not the main source of sex education for youth (Ansuini et al., 1996; Whalen et al., 1996). In a study surveying 700 males and females ranging in age from 9 to 73 years, parents ranked fourth as sources of sexual knowledge. Only 10% of males and 16% of females ranked parents as the primary source of sexual information. Siblings, teacher, and "other" consistently ranked higher than parents. Moran and Corley (1991) surveyed Anglo and Hispanic males on their sources of sexual information. The Anglo boys ranked parents as their third source of information, after school and friends. The Hispanic youth ranked parents last, after friends, experimentation, and school. In other studies, adolescents reported that siblings, peers, television, and schools provide

more information about sexual issues than parents (Bennett and Dickinson, 1980; Bonnell & Caillouet, 1991; Pistella & Bonati, 1998; Whalen et al., 1996).

Health Belief Model Variables as Predictors of Parent-Teen Sex Talks

Barriers

Despite the pervasiveness of sex in the American media, open discussions about sexual topics are considered taboo. Norms that prohibit sexual openness hinder discussions about sexual behavior and serve as deterrents to the sexual socialization of youth (Whitaker et al., 1999). A barrier is an obstacle that prevents or limits parent-teen communication about sexuality. The literature suggests that parents who perceive such obstacles to discussing sexual issues with their teens are less likely to engage in such discussions.

In a study that examined parents' involvement in sex education activities with their ninth grade children, researchers concluded that parental perceptions of barrier to sexual communication is a strong predictor of involvement in sexual education. Barriers include discomfort in serving as a lecturer and embarrassment with the topic of sex (Brock & Beazley, 1995).

Findings from a study of rural parents' perceptions of the characteristics suggests that only two-thirds of parents were comfortable talking with their teens about sexual issues (Jordan et al., 2000). Parents reported feeling uncomfortable for a number of different reasons. These include embarrassment, lack of an opportune time, and inadequate knowledge (Aldous, 1983; Bonnell & Caillouet, 1991; Chilman, 1990; Crawford et al., 1993; Hockenberry-Eaton et al., 1996; Rosenthal & Feldman, 1999).

Ram (1975) identified four barriers to sexual communication as perceived by parents. Parents felt that they lacked the time, the appropriate words, and the knowledge. Also, parents felt that their teens lacked the maturity to receive the information. Similarly, Jaccard and Dittus (1991) identified several reservations that parents have about discussing sex with their teens. These reservations include the possibility of embarrassing the teen, having difficulty finding the right time and place to have such discussions, and having difficulty explaining things clearly.

Likewise, Pick and Palos (1985) noted that the most common barrier to parent-child communication about sex are embarrassment, lack of knowledge, poorly defined values, fear on encouraging sexual activity, and inability to initiate and maintain a conversation on the subject. Allgeier (1983) suggested that many parents fail to communicate with their children about sex because of a desire to avoid conflict, societal pressure to shield youth from permissive sexual values, and sexual discussions may be perceived to violate the incest taboo.

Perceptions of overall family communication have also been found to be a significant predictor of parent-teen communication about sexual issues. Fisher (1990) found that parents who have poor communication patterns with their children are less likely to discuss sexual issues. Other research has supported this assertion with conclusions suggesting that parents who do not talk to their teens about other personal topics are less likely to talk to them about sex (Baldwin and Baronoski, 1990; Jaccard & Dittus, 1993; Rafaelli et al., 1998).

Some studies have examined the quality of the parent-child relationship as a possible barrier to parent-teen communication about sexual issues. Those parents who

believe that they have poor relationships with their teens are less likely to engage is sexual discussions with them (Fox & Inazu, 1980; Kotva & Schneider (1990).

The literature suggests that parents' perceived barriers are related to parental involvement in teen sexual development. Hypothesis One suggests that parents who perceive a barrier to family discussions about sex are less likely to engage in such talks.

Benefit

Benefit refers to the parent's belief that something is to be gained as the result of parent-teen sexual dialogue. Research findings indicate that one reason that parents discuss sexual issues with their children is because they believe that their child wants or needs to have "the sex talk." Parents who believe that their teens are receptive to and interested in sexual conversations are more likely to engage in such discussions (Aldous, 1983). Results from a study that assessed the impact of parental beliefs on family sexual communication among 216 parents show that communication is related to parental beliefs about the child's desire for sexual information from the parent. Those parents who believed that their teens would benefit from a discussion of sexual issues were more likely to engage in sexual discussions (Brock & Beazley, 1995).

Similarly, in a study that examined rural parents' perceptions of the benefits of sexual discussions with their teens, slightly more than one in four respondents believed their teens had no interest in talking with them about sexual issues, and 17% were "not sure" (Jordan et al., 2000). Those parents who felt that their teens were interested engage in sexual discussions more often.

The literature suggests that perceived benefits are related to parental involvement in teen sexual development. Hypothesis Two suggests that that those parents who believe

that sexual discussions are needed to provide teens with information that is otherwise unavailable are more likely to engage in sexual discussions with their adolescents.

Efficacy

Efficacy refers to one's beliefs about his/her ability to carry out a specific behavior. Parents often feel inhibited in discussing sexual topics with their teens because they perceive themselves to be uneducated with regards to such information (Aldous, 1983; Simanski, 1998). Parents may believe that because they lack pertinent knowledge, they are unable to participate effectively in the sexual socialization of their child.

Indeed, many parents are ill prepared to teach their children about sex or even to reinforce information that adolescents learn in school. Researchers in one study provided 73 mothers and their 90 adolescent children with a list of seven terms related to sexual development and asked respondents to define the terms. Terms included ejaculation, hormones, menstruation, ovulation, puberty, semen, and wet dreams. Mothers were not able to adequately define most of the sexual development terms. In fact, most of the mothers in this study were unable to correctly define ovulation, and 33% were unable to correctly define semen (Hockenberry-Eaton, 1996).

In an examination of parental involvement in an at-home sex education program, findings suggest that those who discussed sex with their teens believed that their sex-based knowledge was adequate, while those who did not discuss sex with their teens felt that their knowledge was inadequate. Even more, parents who talked with their teens about sexual issues also believed that they knew how to talk with their children about such issues, while the nontalkers believed that they were unable to hold such conversations (Brock et al., 1995).

The literature suggests that perceived efficacy is related to parental involvement in teen sexual development. Hypothesis Three predicts that those parents who feel that it would not be difficult to discuss sexual issues with their teens are more likely to discuss sexual issues with teens than those parents who believe that they do not have the knowledge and ability.

Severity

Severity is a parent's assessment of the consequences that result from teen sexual behavior. Researchers often assume that all parents assess the consequences of teen sexual behavior as severe and prefer to dissuade their children from having sexual intercourse. However, this may not be true. In one study, researchers found that 20% of parents found it acceptable for their children to have sex once or twice with a steady boyfriend/girlfriend, and approximately one-tenth said they would not discourage their child from having sex (Jaccard et al., 1998). Differences in parental attitudes toward premarital sex and its unwanted consequences influence parent-teen communication about sexual issues.

Those parents who are most disapproving of premarital sex are most likely to discuss sexual issues with their teens. In a study of 745 African-American adolescents and their parents, Jaccard et al (1998) found that parents who sanctioned or approved of premarital sex had fewer sexual discussions with their children.

The literature suggests that parental perceptions of the severity of the negative consequences of sexual activity, as indicated by parental disapproval of teen sexual activity, are related to parent-teen discussions of sexuality. Hypothesis Four predicts that parents who believe that the unwanted consequences of teen sexual behavior are severe

are more likely to discuss sexual issues with their teen than parents who approve of teen sexual activity.

Susceptibility

Susceptibility is a subjective evaluation of how the parent views his or her child's sexual risk. Adolescents who are sexually active are at an increased risk for pregnancy, sexually transmitted diseases, loss of respect by others, and feelings of immorality when compared to teenaged virgins. From an applied perspective, it is crucial that parents know when their children are sexually active so that they can ensure that their teens are well informed about the risks of premarital sex and strategies for practicing safe sex or abstaining (Jaccard et al., 1998).

The literature suggests that parents who believe that their children are sexually active are more likely to discuss sexual issues with their children than parents who do not. Jaccard et al (1998) surveyed 745 African-American adolescents aged 14 to 17 and their mothers. Mothers who believed that their children were sexually active were more likely to engage them in sexual discussions. The authors explained that mothers may initiate conversations about sex because they believe that their children are in need of sexually relevant information.

These findings are also supported by Rafaeilli et al. (1998). The researchers surveyed 666 mothers and 510 fathers on their beliefs about their children's sexual activity. Parents who believed that their children were sexually active were much more likely to have discussed sexual issues with their child.

Parental beliefs about whether or not one's teenager is sexually active may also have an impact on which sexual topics are discussed in the home. Fox (1980) found that

the focus of mother-daughter communications differed before and after the daughter's sexual debut. The researchers speculated that before teenage girls become sexually active, most mothers attempt to prevent sexual experimentation by discussing the moral issues involved in teen sex. Once mothers know or suspect that their daughters are sexually active, they may focus more on practical matters like birth control. Similarly, believing that a child is sexually active is significantly linked to father-child discussions about the dangers of AIDS, STDs, and birth control. In line with previous research, Hypothesis Five predicts that that those parents who believe that their teens are susceptible to sexual risks (sexually active) are more likely to report discussions of pregnancy, sexually transmitted diseases, sexual morality and sexual respect.

Summary

Taken as a whole, the literature on parent-teen communication about sexual issues suggests that the five elements of the Health Belief Model (barriers, benefits, efficacy, severity, and susceptibility) indeed may explain a large portion of the variance in parent-teen discussions of sexual communication. While previous studies have examined some of the variables outlined in the Health Belief Model, most studies have not been theoretically based and have not taken all of the elements together.

Demographic Variables as Predictors of Parent-Teen Discussion

It has been suggested that beliefs and subjective perceptions are not sufficient to predict health and compliance behaviors accurately (Rosenstock, 1990). Modifying variables such as age, education, gender, income, and race often affect the likelihood that one will engage in health protective behaviors and should be taken into account.

Age

Adolescent-parent communication about sexual issues has been associated with the age of the adolescent. Younger teens are more likely to discuss sexual issues with their parents than older teens. Those between the ages of 13 and 16 are more likely to discuss sexual issues with parents than teens between the ages of 17 and 19 (Pistella & Bonati, 1998). Similarly, Fox and Inazu (1980) found that communication about sexual topics occurs most often when children are between the ages of 10 and 13 years old.

Education

The educational level of parents has been found to be a significant factor in predicting parent-teen communication about sexual issues. Fox (1980) found that uneducated mothers were more likely to discuss sexual issues with teens than educated mothers. Leland and Barth's findings (1993) supported this assertion. Nevertheless, educated parents are more likely to provide their teens with reading materials on human sexuality issues than are uneducated parents.

Gender

Within the family, mothers act as the primary agents of sexual socialization for educators for both sons and daughters. This holds true within the realm of parent-teen communication about sexual issues (Fisher, 1987, 1988; Fox & Inazu, 1980; Miller et al. 1998; Mueller & Powers, 1990; Pick & Palos, 1995; Raffaeli et al., 1998; Tucker, 1989; Walters & Walters, 1983; Whalen et al., 1996). Compared to fathers, mothers discuss sexuality with their teens more frequently, cover a wider range of topics, and communicate about sexual and are more comfortable discussing sexual issues with offspring (Baldwin & Baronoski, 1990; Dilorio et al., 1999; Nolin & Peterson, 1992).

Further, mothers tend to talk about sexuality with both sons and daughters (although more often with daughters), while fathers tend to talk with sons only (Fisher 1988; Miller et al., 1998; Rafaelli et al., 1998; Whalen et al., 1996).

The gender of both the parent and the child have been found to predict types of sexual topics discussed. In a study of 371 parents, parents communicated with sons more often about topics related to sexual exploration while they discussed physiological and protective issues with daughters (Downie & Coates, 1990). Similarly, Miller et al (1999) found that mothers are more likely to discuss reproduction and when to have sex while fathers are more likely to discuss pressures to have sex and choosing sex partners.

Income

The literature on the relationship between income and home-based sexual discussions is inconsistent. Some studies have indicated a relationship between income and parent-teen communication about sexual issues. Fox (1980) found that lower class mothers discuss sexual issues with their children more often than higher income and more educated mothers. However, others have concluded that there is no significant relationship between the two (Fisher, 1987).

Race

Rates of parent-teen communication also have been found to vary by race. Black parents are more likely to discuss sexual issues with their teens than White parents. Fox and Inazu (1981) reported that while 15% of Black mothers had never discussed sexual intercourse with their teens, one-quarter of the White mothers had never discussed the issue. The same study revealed that while one-third of White mothers had not discussed birth control, only 19% of Black mothers had remained tight-lipped on the issue.

In an examination of predictors of parent-teen communication about sexual issues, Hutchinson and Cooney (1998) found that Black teens experience higher levels of family discussion of sexual issues than do whites. Black parents were reported to provide teens with significantly more information on sexual risk-related topics like condoms, birth control HIV, pregnancy, and STDs.

Summary

The literature suggests that age, education, gender, income, and race may help to predict parent-teen communication about sexual issues. This study includes these demographic variables in a model that tests the applicability of the Health Belief Model in predicting parent-teen communication about four different sexual topics.

HEALTH BELIEF MODEL

The purpose of the present research is to test the applicability of the Health Belief Model to the arena of parent-teen communication about sexual issues. This chapter first describes the development and history of the Health Belief Model. Next, the breadth and depth of the model are discussed. Following that, the Health Belief Model is compared to similar health-behavior models, and the rationale for selecting this model is presented. Criticisms of the Health Belief Model also are discussed, and ways in which this study will overcome such criticisms are proposed. Finally, predictions concerning the use of the model for parent-teen communication about sexual issues are presented.

History of the Health Belief Model

The Health Belief Model was developed in the 1950s by a group of social psychologists at the U.S. Public Health Service in an effort to explain the widespread failure of people to participate in programs to prevent or to detect disease (Hochbaum, 1958; Rosenstock, 1966; Sheeran & Abraham, 1996). While mobile x-ray units had been set up by the federal government in various neighborhoods to offer free screening for tuberculosis, the response rate for this service was atrocious. Most adults in the communities did not use the screening service (Becker, 1974; Rosenstock, 1990).

While there was clear evidence that demographic variables like socioeconomic status, gender, ethnicity, and age affected the extent to which people would adopt preventative health behaviors, public health officials realized that none of these variables could be modified through health education (Rosenstock, 1974). Even more, many health

preventative programs were offered free of charge during this time, minimizing the predictive ability of socioeconomic status (Sheeran & Abraham, 1996). It became apparent to public health officials that in order to reach a larger population, an understanding of the socialization variables that led to participation in health preventive programs was needed. Individual beliefs offered an ideal link between socialization and behavior.

Hochbaum (1958) studied more than 1,200 adults to explain why some people participated in the tuberculosis screenings while others did not. The researcher found perceived susceptibility to tuberculosis and perceived benefits of screenings explained some of the difference between those that had and had not participated in the chest x-ray screening. The relationship between health beliefs and health behaviors was conceptualized in terms of Lewin's (1951) idea of valence. The idea of valence focuses on how individuals conceptualize certain behaviors as more or less attractive (Sheeran & Abraham, 1996). The resulting expectancy-value model suggested that events were believed to be more or less likely when they were positively or negatively evaluated by the individual.

Five years later, Kegeles (1963) used Hochbaum's idea in a prospective study of dental patients. Findings suggest that perceived susceptibility to the worst imaginable dental problems and awareness that visits to the dentist might prevent these problems were useful predictors of the frequency of dental visits.

Rosenstock sought to articulate the ideas suggested by the previous researchers. He proposed that preventive health behavior could be explained by two classes of variables: "1) the state of readiness to take a specific action and 2) the extent to which a

course of action is believed to be beneficial in reducing the threat" (Rosentsock, 1966, p. 98). He described both classes of variables as two-dimensional. An individual's state of readiness to act is determined by personal *susceptibility* to a particular health threat and by perceptions of *severity* with which the threat might affect his or her life. Both the benefit and the barrier of action determine whether or not an individual believes a course of action is beneficial in reducing threat. Also of importance is the stimulus or cue to action to trigger the decision making process.

Haefner and Kirscht (1970) took this research one step further and demonstrated that a health education intervention designed to increase participant's perceived susceptibility, severity, and benefits resulted in a greater number of check-up visits to the doctor compared to controls over the following 18 months. Thus, by the early 1970s a series of studies had suggested that these key health beliefs provided a useful framework for understanding individual differences in health behavior and for designing behavior change interventions.

A later version of the model was developed by Becker (1972) to investigate sick-role behavior (the activity taken by those who consider themselves sick to get well). Many researchers mistakenly believe that Becker merely renamed Rosenstock's model by introducing new variables. However, the model was altered in a number of ways. First, Becker proposed that there were actually three classes of variables that determined the likelihood to take a specific health-promoting behavior. In addition to readiness to take a certain action and whether or not certain behaviors are beneficial in reducing threat, Becker added health motivation. Health motivation was defined as readiness to be concerned about health matters (Becker, 1977).

In 1974, Health Education Monographs devoted an entire issue to the Health Belief Model. The articles focused on understanding why some people took certain health-related actions while others did not. The research presented in the monograph provided substantial support for the Health Belief Model in explaining prevention behaviors as well as behaviors in response to symptoms or diagnosed disease.

Three years later, Bandura introduced the concept of efficacy to the Health Belief Model. Efficacy was defined as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 79). Efficacy was added to the Health Belief Model only after researchers began to employ the model to look at behaviors requiring long-term changes. Originally, the model looked at preventive actions that were one-shot in nature, such as a health screening or immunization. However, more recent research has focused on changing lifestyles, which may require a good deal of confidence before one can successfully take on the behavior. For instance, it is important for individuals to believe that they *can* stop smoking or change eating habits or even talk with their children about sex. Research suggests that adding efficacy to the model has increased its explanatory power (Rosenstock, 1990). See Figure 2 for a graphic presentation of the Health Belief Model.

During the following decade, the Health Belief Model became increasingly popular in health behavior research. In 1984, Janz and Becker provided an updated critical review of the studies conducted between 1974 and 1984 that tested the Health Belief Model. Their sample of articles included twenty-four studies that examined preventive behavior, nineteen that explored sick-role behaviors and three that addressed how clinics could use the model to achieve higher rates of patient compliance. Summary

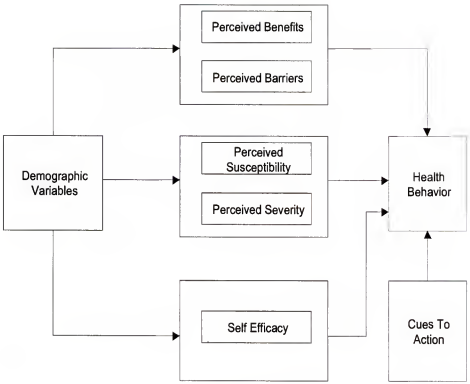

Figure 2. Health Belief Model

results provide substantial support for the Health Belief Model, with findings from prospective studies as favorable as findings from retrospective studies. Perceived barriers consistently proved to be the most powerful predictor and perceived severity arose as the least powerful predictor across all studies and behaviors.

Rationale for Selecting the Health Belief Model

This section explains the rationale for selecting the Health Belief Model. First, the tenets of the Health Belief Model are compared to those of other theories of health behavior. Next, the breadth and depth of the Health Belief Model are explored by topic area, sample population, and research design.

Tenets of Major Theories of Health Behavior

Most of the models used in the study of health behavior are based on the assumption that human beings are goal-oriented planners who base their behaviors on rational decision making (Airhihenbuwa & Obregon, 2000; Maddux, 1983). The most commonly used social cognition models to study health behavior are the Health Belief Model, the Theory of Reasoned Action, and the Theory of Planned Behavior (Connor & Norman, 1996; Fishbein & Guinan, 1996; Maddux, 1983; Gochman, 1988).

According to the Health Belief Model, the likelihood that someone will adopt or continue to engage in a health-protective behavior is dependent upon feeling at risk for consequences that are considered severe. Even more, the person must believe that the benefits of taking the preventive action outweigh the perceived barrier to taking that action. Finally, a person has to believe that he/she has the ability to carry out the behavior (Becker, 1974).

In comparison, the Theory of Reasoned Action suggests the likelihood that a person will adopt a given behavior is primarily determined by the strength of a person's intention to perform that behavior. Intention is the result of two basic factors: the person's attitudes toward performing the behavior and the subjective norm concerning the behavior. Attitude is one's overall positive or negative feeling with respect to personally performing the behavior while the subjective norm is the perception that there is pressure from others to perform the behavior in question (Ajzen & Fishbein, 1980).

The Theory of Planned Behavior is an extension of the Theory of Reasoned Action (Ajzen, 1985). It suggests that taking a given health action is based on the strength of a person's attempt to perform a behavior and the degree of control the person has over that behavior. According to this theory, the variables that determine an attempt to perform a behavior are beliefs about the likely consequences of success and failure, the perceived probabilities of success and failure, normative beliefs, and motivations to conform to norms.

The Health Belief Model, the Theory of Reasoned Action, and the Theory of Planned Behavior, to some degree, share commonalties. They each suggest that at least three factors influence a person's health behaviors (Fishbein & Guinan, 1996; Maddux, 1983). Factors considered are the following:

- the perceived chances of acquiring a given consequence (susceptibility),
- attitudes toward performing the behavior, which is based on beliefs about the positive (benefits) and negative (barriers) consequences of performing that behavior, and
- perceived ability to perform the behavior (efficacy).

While these similarities exist, several differences set the Health Belief Model apart from the other two theories. The first difference is that the Health Belief Model predicts the actual probability of behaving in a certain way, while the Theory of Reasoned Action and the Theory of Planned Behavior only predict the behavioral intention apparent when the three models are compared (Connor & Norman, 1994). Because this study is concerned with parent-teen communication about sexual communication, and not parental intent to communicate with children about sexual issues, the Health Belief Model provides the better choice to guide this study.

A second difference is that both the Theory of Reasoned Action and the Theory of Planned Behavior consider an individual's perceptions of the social norms, but the Health Belief Model makes no notice of such pressures. The current study is concerned with those parental characteristics that are alterable, namely, parental beliefs. How norms shape such beliefs is outside of the scope of this project.

A final difference is that the Health Belief Model has separate components of perceived severity and susceptibility, while the other two models do not consider emotional fear (Connor & Norman, 1994; Fishbein & Guinan, 1996; Maddux, 1983). The present investigation is concerned with parent-teen communication about a very fearful subject for many parents. Thus, such arousal variables are key.

Breadth and Depth of the Health Belief Model

The Health Belief Model has been described as the oldest and most widely used model for investigating health related behavior (Arnold & Quine, 1994; Connor & Norman, 1996; Rosenstock, 1990). Sheeran and Abraham (1996) suggested that the Health Belief Model has been applied to a broader range of health behaviors than any

other social cognitive model. Four areas of behavior have been examined using the health belief model:

- preventive behaviors that an individual engages in or ceases to engage in because he/she believes that it will prevent or reduce risk for future health problems,
- promotive behaviors that are taken to maintain or improve their current state of good health,
- sick role behavior that are taken in compliance with recommended medical regimens, and
- clinic usage behaviors that include visits to health care professionals (Maddux, 1993).

Specific behaviors that the model has been used to predict include health screenings, drug use, exercise, diet, vaccinations, breast-self-exams, contraceptive use, dental behaviors, antihypertensive regimes, diabetic regimens, renal disease regimens, parental compliance with regimen's for a child's condition, physician visits, sexual behavior, and seat-belt use (Becker et al., 1977; Bennett & Bozionelos, 2000; Harrison et al., 1992; Janz & Becker, 1984; Mattson, 1999; Manfredi & Lacey 1998; Sheeran & Abraham, 1996). Indeed, the model appears to have great potential as a useful tool in the investigation of factors shaping parent-teen communication about sex. If the model proves to be a significant predictor of parent-teen communication about sexual issues, then health educators may be able to offer interventions to alter and shape parent beliefs, which in turn may increase parent-teen communication about sexual issues.

The diversity of the content areas examined using the Health Belief Model compares to the broad range of samples that have been used in testing the model. It has been suggested that the HBM research has spanned more subject populations than any

other social cognitive model (Sheeran & Abraham, 1996). Studies using this model have cut across gender, education, income, age, race, and ethnicity.

Finally, the Health Belief Model has surpassed all of its counterparts in its application across data collection methods (Sheeran & Abraham, 1996). The model has been successfully applied to studies using self-completion questionnaires, structured face-to-face interviews and telephone interviews. Additionally studies using the HBM have involved observation medical records. Even more, Janz and Becker's 1984 review of the literature suggested that two-fifths of the studies noted were longitudinal. It is expected that the Health Belief Model will be adequate in this study, which employs self-report data from parents.

Critique of the Health Belief Model

With fame comes criticism. While the Health Belief Model is one of the most widely used models, it may also be one of the most scrutinized models for investigating health behavior (Arnold & Quine, 1994; Rosenstock, 1990; Sheeran & Abraham, 1996). A common criticism of the Health Belief Model is that the belief-behavior relationship has never been uniformly established (Rosenstock, 1990). That is, research findings do not consistently show that behavior is a function of beliefs. While beliefs sometimes contradict behavior, two evaluations of research on the Health Belief Model found its components to be significantly predictive of almost every health behavior under study (Becker et al., 1977; Janz & Becker, 1984). The appraisals covered 46 different studies that used the Health Belief Model. It is expected that while beliefs are not sufficient conditions for health behaviors, beliefs can be used to effectively predict behavior. The

current study is concerned only with how parent-teen communication about sexual issues is shaped by parental beliefs.

Another criticism of the Health Belief Model is that it ignores socio-environmental factors. Opponents of the theory argue that individual factors are insufficient in explaining health behaviors (Rosenstock, 1990). While proponents of the Health Belief Model agree that it is important to examine a wide array of factors that might affect health, it is also understood that the health belief model is a psychosocial model. As such, the goal of the model is to account for as much of the variance in an individual's health-related behaviors as can be explained by their attitudes and beliefs (Rosenstock, 1999). The Health Belief Model is used in the current study to examine parent-teen communication about sex as a function of parental attitudes and beliefs. Some demographic factors are added to the analysis to enhance predictive power.

Others criticize the Health Belief Model for its lack of quantification. The Health Belief Model does not place numerical coefficients on model constructs nor does it offer an explanation of a numerical relationship among them (Rosenstock, 1999). While this criticism is undoubtedly valid, it must be noted here that most social-cognitive models in health behavior research do not offer such specific quantification (Sheeran & Abraham, 1996). Nevertheless, most researchers have operationalized the constructs of the model as separate independent variables, and this has accounted for a great deal of the variance in health behavior (Janz & Becker, 1984). This study follows in the footsteps of those researchers who have ordered the constructs as five separate independent variables in an effort to gain some understanding of predictors of parent-teen communication about

sexual issues. Regression analysis is carried out to consider each construct variable simultaneously and note the contributions of the demographic variables.

Another criticism of the Health Belief Model is that the definitions of the model's constructs are too open and ambiguous. Indeed, several studies designed to examine the use of the Health Belief Model illustrate there have been wide variations in the operationalization of the model's constructs (Becker & Maiman 1975; Harrison et al., 1992; Rosenstock 1974). Some have concluded that this lack of operational homogeneity weakens the HBM's status as a consistent model. However, most of studies employing the Health Belief Model show that these various operationalizations identify beliefs that are indeed correlated with health behaviors (Janz & Becker, 1984). The operationalization of terms for this study are patterned after definitions presented by Becker (1974).

The Health Belief Model is also criticized for being differentially applicable to various ethnic groups. While the model has been quite effective in predicting the behaviors of European-Americans, the success has not been demonstrated within Asian-Americans, African-Americans, or Hispanic-American populations. The explanation for the differences may lie in the fact that European-American behavior is concentrated on the self, whereas members of the other minority cultures often concentrate their behavior on the ingroup (Steers et al., 1996). The researchers concluded, "Health beliefs that concern the individual self (e.g., susceptibility) may be more likely to influence the behavior of Euro-Americans than those of other groups, whereas health beliefs that concern a group may be more likely to influence other ethnic groups' behaviors than

Euro-Americans" (p. 108). The present study examined the behavior taken by one individual on behalf of another.

A final criticism of the Health Belief Model is that it does not take into account that the construct perceptions may not be a part of an individual's conscious thoughts. By conceptualizing the motivation to protect or promote one's health as a combination of beliefs, it assumes that individuals are rational and calculating. It is duly noted that humans are sometimes irrational. Indeed, some sexual communication between parent and child is unintentional. One of the assumptions of this study is that humans are rational.

RESEARCH DESIGN AND METHODS

The objective of this study was to test the applicability the Health Belief Model in the arena of parent-teen communication about sexual issues. This chapter includes a description of the data and the methods used in the analysis.

Overview of the National Longitudinal Survey of Adolescent Health

Data from the National Longitudinal Survey of Adolescent Health (Add Health) was chosen to test the hypotheses. Add Health is a longitudinal study of the health-related behaviors of adolescents in grades 7 to 12. It was designed to explore the causes of adolescent health behaviors, with special emphasis placed on the influence of families, friends, schools, and communities. Data sources for the larger study include students, parents, and school administrators.

The Add Health study was funded by the National Institute of Child Health and Human Development (NICHD) and 17 other federal agencies. Fieldwork was conducted by the National Opinion Research Center of the University of Chicago. J. Richard Udry of the Carolina Population Center at the University of North Carolina at Chapel Hill is the principal investigator of the Add Health study.

The primary sampling frame for the Add Health study included all high schools in the United States that had an 11th grade and at least 30 enrollees in the school (Bearman et al., 1997). From this, a sample of schools was selected with unequal probability of selection. Overall, 79% of the schools contacted agreed to participate, for a final sample

of 132 schools (80 high schools and 52 middle/feeder schools). Schools varied in size from fewer than 100 to more than 3,000 students.

School administrators completed a half-hour self-administered questionnaire yielding information on the provision of health services, school policies, school environments, and characteristics. A total of 164 administrator questionnaires were completed in Year 1.

The participating schools provided a roster of all enrolled students and 96% (n = 129) of the schools hosted a confidential in-school survey from September 1994 to April 1995. The survey was completed by 90,118 of 119,233 eligible students in Grades 7 through 12.

From students on the school rosters as well as students who were not on an enrolled roster but who completed an in-school questionnaire, a random sample of 20,745 adolescents was selected for in-home interviews; 12,118 (79.5%) completed the 90-minute interviews. Of these, 75% had completed an in-school questionnaire.

For adolescents completing the in-home interview, a parent (in most instances a mother) was also asked to complete a 40-minute, interviewer-administered, paper-and-pencil survey. The adolescent's mother (or other female head of the household) was the desired respondent to complete the questionnaire because mothers are generally more familiar than fathers with the schooling, health status, and health behaviors of their children.

One year after the initial in-home survey was conducted, most students participating in Wave I of the in-home survey were re-interviewed. The interview for

Wave II was generally similar to that at Wave I. However, parents were not included in Wave II.

The public-use data set includes information from the Student In-School Questionnaire, the School Administrator Questionnaire, the Student Wave I and II In-Home Interview, the Add Health Picture Vocabulary Test, and the Parent Questionnaire from Wave I. The sample for the public-use data set is made up of one-half of the core sample, chosen at random, and one-half of the over-sample of African-American adolescents with a parent who has a college degree. The total number of respondents in this data set is 6,504 (Figure 3).

Present Study

The present study employed only the interviews conducted with parents in Wave I. The purpose of the present study was to determine whether parental beliefs predict parent-teen communication about sexual issues. The respondents were 6,504 parents of children who participated in the at-home leg of the larger study. The unit of analysis was the parent.

While weights have been created to correct for the complex design effects of Add Health when the unit of analysis is the school or the adolescent, such weights are not available when the unit of analysis is the parent (Chantala & Tabor, 1999). Consequently, the findings of the present study are not nationally representative. However, one parent of each adolescent respondent interviewed in Wave I was asked to complete a questionnaire. As such, the findings of this study may be generalized to the parents of students participating in the Add Health Study.

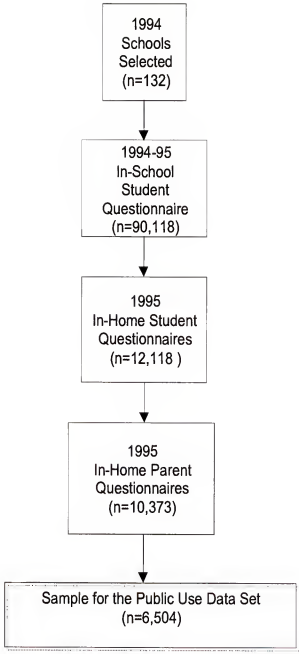

Figure 3. Sampling Design

Rationale for Using Add Health Data

The purpose of this study was to provide a description of the relationships that exist between parent-teen discussions about sexual issues and parental perceptions of

- the barrier to talking to their children about sex,
- the benefit of parent-teen communication about sex,
- efficacy in engaging in discussions,
- the severity of sexual consequences, and
- their teen's susceptibility to the negative.

Sexual issues include pregnancy, sexually transmitted diseases, sexual respect, and sexual morality. The Add Health data are particularly suited for an analysis of health beliefs and family communication about sexual issues for several reasons.

First, the interviews provide detailed information about sexual communication. Researchers have long debated the validity of the term "sexual communication" in the family because there is a lack of consensus on what is meant by the term (Miller et al., 1998; Nolin & Petersen, 1992). When asked if they have had the "sex talk" with their children, many parents have interpreted the question differently. Some have responded yes because they have discussed pregnancy or STDs or birth control, or the morality of having sex or even how sexual intercourse is related to the quality of one's social life. Indeed, each type of discussions is unique in its content and intent. The Add Health data set allows clarity in researching sexual communication as it allows the researcher to study sexual communication about four different topics. Most research relies on global measures of sexual communication in the home, by asking whether or not the family has discussed sex. This study offers detailed insight into specific types of sexual communication. The concern here is with sexual communication about pregnancy, sexually transmitted diseases, sexual respect, and sexual morality. Parents are asked if

they have discussed the morality, loss of respect, sexually transmitted diseases, and pregnancy with their teens.

The Add Health study also provides the advantage of a large, diverse sample. Typical studies of parent-adolescent communication draw their participants from either clinical samples of families experiencing problems or from families who volunteer as an enrichment experiment (Whalen et al., 1996). This study allows a wider range of respondents (n = 6,504) who differ in age, gender, marital status, ethnicity, education, and income.

Additionally, the Add Health data set allows a full test of the Health Belief Model. Add Health was designed to explore the causes of teen-health behaviors, with an emphasis on the influence of social context. Add Health assumes that families either encourage healthy choices of activities or unhealthy, self-destructive behaviors. Data exist to support or refute the hypothesis that the Health Belief Model can be used to explain parent-teen communication about sexual issues. The Add Health researchers posed questions on key components of the Health Belief Model, thereby providing the necessary information to test the relationship between the components of the Model and parent-teen communication. The questions that are asked in the Add Health study tightly correspond with the variables of the Model.

A final strength is that the Add Health data employ responses from both the male and female parent. The father's role in communicating with children about sexual issues has seldom been examined (Nolin & Petersen, 1992). Most studies have focused on girls and their mothers, and those that include boys generally emphasize mother-son

communication (Jaccard & Dittus, 1991). The present study includes fathers in the examination of parent-teen communciation about sexual issues.

Despite the richness of these data, three limitations are evident. First, the sample does not include the parents of out-of-school students. Research suggests that family communication patterns are significantly different for teens that are in school and those that are out of school (Holtzman & Rubinson, 1995). Second, because the mother or female guardian was preferred over the father or male guardian, females significantly outnumber males in the present study. Because mothers are generally more familiar than fathers with the schooling, health status, and health behaviors of their children, the adolescent's mother (or other female head of the household) was the desired respondent to complete the questionnaire. Third, the findings are not generalizable to the larger parent population. The Add Health study has a complex sampling design and weights are not currently available for the parent population. Generalizations are only applicable to the parents of those students who participated in the study. Finally, because adolescents were the only participants interviewed in a longitudinal fashion, causation cannot be inferred from the design of the present study. Only association can be determined.

Dependent Variables

To measure parent-teen communication about pregnancy, sexually transmitted diseases, sexual respect, and sexual morality, the following questions were used.

- How much have you and your child talked about his/her having sexual intercourse and the negative or bad things that would happen if he got someone (she got) pregnant?
- How much have you and your child talked about his/her having sexual intercourse and the dangers of getting a sexually transmitted disease?

- How much have you and your child talked about his/her having sexual intercourse and the negative or bad impact on his/her social life because he/she would lose the respect of others?

- How much have you and your child talked about his/her having sexual intercourse and the moral issues of not having sexual intercourse?

Each of the four dimensions of parent-teen communication about sexual issues was measured on a 4 point Likert-type scale in the larger Add Health study. On this scale, 1 represents "not at all"; 2 represents "somewhat"; 3 represents " a moderate amount"; and 4 represents "a great deal." For the present study, the responses were recoded into two categories. The first category, represented by "0" in the analyses, includes all responses that indicate that there has been no discussion (not at all), while the second category includes all responses indicating that the parent has discussed the sexual issue with the child (somewhat, a moderate amount and a great deal). The second category is represented by the number "1" in the analysis.

Independent Variables

It is hypothesized that parent-teen communication about sexual issues is a function of parental perceptions of barrier, benefit, efficacy, severity, and susceptibility.

Barrier

The barrier, or condition that makes discussing sexual consequences with teens less than desirable, was measured by using the following question:

> How much do you agree or disagree with the following statement:
> It would embarrass (TEEN) to talk to you about sex and birth control.

Responses on the original Add Health questionnaire were based on a Likert scale which had the following ratings: 1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree and 5 = strongly disagree. For the present study, this variable was

recoded so that responses of strongly agree and agree were placed into the "no barrier" group (coded as 0 in the analysis), while responses of strongly disagree and disagree were placed into the barrier group (coded as 1 in the analysis). The "no barrier" category represents a lack of perceived barrier, while the "barrier" category represents some perceived barrier to discussing sexual issues with the teen. The ambivalent respondents who answered "neither agree nor disagree" were dropped from the present study's analysis.

Benefit

The following question was employed to measure parental perceptions of benefit, or expected gains from discussing sexual consequences with their teen.

> How much do you agree or disagree the following statement:
>
> Your child will get the information somewhere else, so you don't really need to talk to him/her about sex and birth control.

Responses on the original Add Health questionnaire were based on a Likert scale which had the following ratings: 1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree and 5 = strongly disagree. This variable was dummy coded so that responses of strongly agree and agree were placed into the "no benefit" group (codes as 0 in the analysis), while responses of strongly disagree and disagree were placed into the "benefit" group (coded as 1 in the analysis). The "no benefit" category represents a lack of perceived benefit, while the "benefit" category represents some perceived benefit of parent-teen communication about sexual issues. The ambivalent respondents who answered "neither agree nor disagree" were dropped from the present study's analysis.

Efficacy

In this study, parent's perception of efficacy, or one's beliefs about his/her ability to carry out a health preventive behavior was measured by the following questions:

> How much do you agree or disagree with each of the following statements:
>
> It would be difficult for you to explain things if you talked with your child about sex and birth control.

Responses on the original Add Health questionnaire were based on a Likert scale which had the following ratings: 1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree and 5 = strongly disagree. This variable was recoded so that responses of strongly agree and agree were placed into the "no efficacy" group (coded as 0 for the analysis), while responses of strongly disagree and disagree were placed into the "efficacy" group (coded as 1 for the analysis). The "no efficacy" category represents a lack of perceived efficacy, while the "efficacy" category represents some perceived efficacy in discussing sexual issues with teens. The ambivalent respondents who answered "neither agree nor disagree" were dropped from the present study's analysis.

Severity

The following question was used to measure parent's perception of the severity of sexual consequences.

> How much do you agree or disagree with each of the following statements:
>
> You disapprove of (Name)'s having sexual intercourse at this time in his/her life.

Responses on the original Add Health questionnaire were based on a Likert scale which had the following ratings: 1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree and 5 = strongly disagree. This variable was recoded so that

responses of strongly agree and agree were placed into the "no severity" group (coded as 0 for the analysis), while responses of strongly disagree and disagree were placed into the "severity" group (coded as 1 for the analysis). The "no severity" category represents a lack of perceived severity, while the "severity" category represents some perceived severity. The ambivalent respondents who answered "neither agree nor disagree" were dropped from the present study's analysis.

The data categories for the four above-mentioned independent variables were reduced from five groups (strongly agree, agree, neither agree nor disagree, disagree and strongly disagree) to two groups (no belief, some beliefs). This recoding was done for two main reasons. First, this recoding allows the opportunity to place all that those have similar perceptions into a single group (Trochim, 2000). This study was not concerned with how strongly parents agree or disagree but with the fact that they either have or do not have certain beliefs. Next the dummy variable coding was appropriate because the explanatory variables in a logistic regression analyses must be either binary or continuous (Bender & Benner, 2000; Hosmer & Lemeshow, 1989). While this dummy coding increased the missing data for the current study, it only eliminated those respondents that expressed ambivalence on the independent variable. Indeed, the recoding still allows for an ample testing of the hypotheses presented.

Interestingly, the number of respondents who neither agreed nor disagreed on the barrier, benefit, efficacy, and severity variables and were therefore rejected from the analysis comprised between 4% and 8% of the sample for each question. The number of respondents who answered "neither agree nor disagree" was 499 for barrier, 274 for benefit, 246 for efficacy, and 368 for severity. This similarity in the number of

ambivalent respondents suggests that the same individuals may have answered each of these questions in the same way.

Susceptibility

Susceptibility, or parental perceptions of the teen's chances of being exposed to the unwanted consequences of sexual activity , is the final independent variable of interest for this study. Susceptibility was measured by the following question:

Do you think that he/she has ever had sexual intercourse?

The responses to this question are also recoded. The "no" category is coded as 0, while "yes" is coded as 1.

Missing Data

The listwise or casewise data deletion method was used to handle missing data for the present study. That is, all records having missing data for any one variable were omitted completely from any analysis. As such, only cases that did not contain any missing data for any of the variables selected for the analysis were included in the analysis. This approach is the default method of handling incomplete data by the SAS statistical software package (Roth, 1994).

The major problem with missing data is that it decreases statistical power by reducing the size of the sample (Roth, 1994). A high level of power often requires a large sample. Because the size of the sample in the present study remains large even with the missing data, the missing data is not considered a great limitation. The total sample size is 6,504. Various analyses are conducted with samples sizes ranging from 3,984 to 5,368.

Demographic Variables

It has been suggested that demographic variables influence individual perceptions (Becker, 1974). The following demographic variables are included in the analysis:

- child's age,
- child's sex,
- parent's level of education,
- household income,
- marital status,
- parent's gender, and
- parent's race.

Age

The age range for youth in the larger ADD Health study was 12 to 21 years. For the current research project, age was dummy coded so that adolescents between the ages of 12 and 16 at the time of the study were placed in the younger teen category. The category was coded as "0" for analysis. Adolescents between the ages of 17 and 21 were placed in the older adolescent category, which was coded as "1" in the analysis. The variable was dichotomized in this way because research suggests that those under the age of 16 are more likely to discuss sexual issues than teens between the ages of 17 and 19 (Pistella & Bonati, 1998).

Education

In the larger Add Health study, parents were asked the following question: "How far did you go in school?" Responses were

- 8^{th} grade or less,
- more than 8^{th} grade but did not graduate from high school,
- went to business, trade or vocational school instead of high school,
- high school graduate,
- completed a GED,
- went to business, trade or vocational school after high school,
- went to college,

- graduated from a college or university,
- professional training beyond the 4-year degree, and
- never went to school.

For the present study, these ten categories were collapsed into two categories. Those who had less than a high school diploma or its equivalent were coded in the "lower education" category, represented by "0" category, while those with at least a high school diploma or its equivalent were included in the "higher education" category coded as "1" in the analysis. This grouping is consistent with national standards as the median years of schooling in the United States has been between 12 and 13 years since 1970 (U.S. Census Bureau, 1998). The two categories of education represent those who have achieved less than the average education and those who are at or above the median educational level.

Income

The original Add Health questionnaire asked parents the following question: "About how much total income, before taxes, did your family receive in 1994? Include your own income, the income of everyone else in your household, and income from welfare benefit, dividends and all other sources." Responses are recorded with a number in the range of 0 to 999,000. For the current study, the income data were dummy coded so that those families earning less than $34,999 were placed in the "lower income" category represented by "0" while those earning at least $35,000 were placed in the "higher income" category represented by "1" in the analysis. The median household income in 1995, when the Add health parent questionnaire was administered, was $35,004 (U.S. Census Bureau, 2002). The coding in this study created two groups in

which both those that fall below the average income in the U.S. and those that are at or above this level were represented.

Marital Status

The Add Health questionnaire asked parents the following question: "What is your current marital status?" Possible responses were single, married, widowed, divorced, and separated. All responses were dummy coded so that single, widowed, divorced, and separated parents were placed in the "unmarried" category, represented by "0" in the analysis, and married parents were placed in the "married "category represented by "1." Married and unmarried surfaced as the natural choice in dichotomizing this nominal variable.

Race

The Add Health Study used two types of questions to assess the respondent's race. The first question asked the following: "What is your race? You may give more than one answer." The other question asked the interviewer to "Mark the race of the respondent from your observation alone." Because the former did not allow for a mutually exhaustive variable, the latter was used. Responses were

- White,
- Black,
- American Indian/Native American, and
- Asian or Pacific Islander.

Three dummy variables were created for the present study. The variable White has two categories: "Non-White" (represented by 0) and "White" (represented by 1). The variable Black has two categories: "Non-Black" (represented by 0) and "Black" (represented by

1). The variable Other has two categories: "Non-Other" (represented by 0) and "Other" (represented by 1).

Sex

The sex of both the parent and the child were dummy coded so that in both cases the "male" category was represented by "0" and the female category was represented by "1."

Data Analysis and Statistical Procedures

Univariate Analysis

Initially, descriptive statistics were calculated on all variables. A univariate analysis was conducted to determine variable frequencies. The number of cases in each category was summarized.

Bivariate Analysis

A bivariate analysis was then performed to determine the significance and strength of the relationships between the dependent variables (parent-teen communication about pregnancy, STDs, morality and respect) and the independent and demographic variables, respectively. Cross-tabulation was utilized first for the bivariate analysis to show how categories of the independent variable are distributed across the dependent variable. According to Agresti and Finlay (1984), cross-classifications are one of the most useful tools for bivariate analysis. Cross-tabulation is presented in a two-dimensional table, with each row representing the categories of one variable and each column representing the category of the other variable. Usually, the columns represent the outcome and the rows represent levels of a factor that may influence the outcome.

With cross-tabulation, each unique combination of the two variables analyzed is represented by one cell in the table (SAS Institute, 1999).

The chi-square statistic, which is based on a comparison between the frequencies that are observed in the cells of the cross-classification table and those that would be expected if the variables were unrelated, was used to test for independence between the independent and dependent variables (Bryman & Cramer, 1990). This statistic tests the null hypothesis that the variables are statistically independent. A chi-square probability of .05 or less is commonly interpreted by social scientists as justification for rejecting the null hypothesis that the variables are independent (Agresti, 1990). As such, the 0.05 level of significance is used in the present study. The use of chi-square is appropriate for this study because it requires a large, random sample, adequate cell sizes, independent observations, and normal distribution of deviations. Even more, this nonparametric test does not assume normal distribution for the data the level of data or the direction of the relationship (Agresti & Finaly,1984; Handel, 1974; Trochim, 2000). Finally, Pearson chi-square is appropriate for all variables and can detect any kind of association (SAS Institute, 1999).

All of the variables in this study are binary variables that are ordered in terms of having none of the characteristic of interest or some of the characteristic of interest. For the analysis conducted in the present study, the variables were treated as nominal binary. According to Agresti and Finlay (1984),

> The measurement levels may be viewed as forming a hierarchy…It is always possible to move downward in the hierarchy with respect to a specific measurement. In other words, any variable measured at the interval level may be treated as if it were or nominal, and any variable may be treated as a nominal variable. This fact is important because it

> implies that statistical procedures designed for variables at a certain level can also be used for variables measured at a higher level. (p. 17)

Odds ratios were calculated to determine the degree of association between the dependent and independent variables in this study. Generally, odds ratios show the relative increase in the odds of one variable having a given value, given that the other variable has the same value. The odds ratio is calculated by dividing the odds of the first variable by the odds of the second variable. The result can be any nonnegative number. When the odds ratio is 1 (or when the 95% confidence interval on the odds ratio includes the value of 1), the independent variable is not considered to be a useful predictor variable. When the odds ratio is greater than 1, the odds of an event occurring increases as a result of the predictor, whereas when the odds ratio is less than 1, the odds of an event occurring decreases a s a result of the predictor variable. The strength of association increases with the deviation from 1 (Agresti & Finlay, 1984; SAS Institute, 1999).

Odds ratios are a widely used measure of association (Handel, 1974) and were chosen for several reasons. First, odds ratios are appropriate for categorical data. In the present study, dummy coding was conducted for every variable. Second, odds ratios were selected because it is a common measure of association for 2-by-2 tables. In the present study, there are two categories of each dependent variable and two categories for each independent variable. A final reason for using odds ratios is that homoscedasticity and a normal distribution of variables are not required.

Multivariate Analysis

Logistic regression analyses were conducted to describe the ability of the Health Belief Model constructs, taken as a whole, to predict parent teen communication about the four sexual issues: pregnancy, sexually transmitted diseases, sexual respect, and sexual morality. Logistic regression applies maximum likelihood estimation after transforming the dependent variable into a logit variable, the natural log of the odds of the dependent variable occurring or not. In this way, logistic regression estimates the probability of a certain event occurring.

This method of analysis was selected for a number of reasons. First, logistic regression is appropriate for modeling binary dependent variables (DeMaris, 1995). The response variables in this study are divided into two categories: no discussion and discussion. Another reason for employing the logistic regression method is because the logistic curve is S shaped. In this study, all variables are coded as either 0 or 1, so a curve that bends at each end is necessary to stay within the bounds. The linear function does not fit. Finally, logistic regression was chosen because the requirements are less stringent when compared to other techniques. More specifically, logistic regression does not require normally distributed variables, does not assume homoscedasticity, does not assume linearity of relationship between the independent and dependent variables, and does not assume that error terms are normally distributed (Hosmer & Lemeshow, 1989; Morgan & Teachman, 1995).

The success of the logistic regression is assessed three ways. First, the researcher considers the chi-square goodness-of-fit test as an indicator of the appropriateness of the model. This statistic tests the null hypothesis that none of the independent variables are

linearly related to the log odds of the dependent. As such, the model chi-square tests the null hypothesis that all population coefficients, except the constant, are zero. The model chi-square test is a likelihood ratio reflecting the difference between the error not knowing the independent variables (initial chi-square) and error when the independent variables are included in the model (deviance). When probability is less than or equal to 0.5, we reject the null hypothesis that knowing the independent variables makes no difference in predicting the dependent variable in logistic regression. Hence, it is desirable for the model chi-square to be significant at the .05 level or better (Agresti, 1990; DeMaris, 1995; Hosmer & Lemeshow, 1989).

Next, the odds ratio (the ratio of two odds) as a measure of association is considered. The odds ratio indicates how much more likely (or unlikely) it is for an event to occur (or not to occur) by providing the multiplicative change required to move from one odds to the next. An odds ratio greater than 1.0 indicates an increased likelihood of the event occurring, while an odds ratio less than 1.0 indicates a decreased likelihood of the event occurring (Agresti, 1989; Morgan & Teachman, 1988).

Finally, the researcher inspects the significance probability of the p-value for each independent variable in the model. If the p-value is less than or equal to 0.05, the null hypothesis that the parameter is zero is rejected, and it is concluded that the corresponding variable is statistically significant in the analysis. If, on the other hand, the p-value is greater than .05, we accept the null hypothesis that the variable is not significant. Again, it is desirable for the p-value to be significant at the .05 level or better (Agresti, 1990; DeMaris, 1995; Hosmer & Lemeshow, 1989).

For the present study, several logistic regression analyses were employed for each dependent variable. The first model included only those Health Belief Model variables that were significant in the bivariate analysis. A second model included only those demographic variables that were significant in the bivariate analysis. The final model included both the significant Health Belief Model constructs and demographic variables. The analyses for this study were carried out using the SAS statistical analysis program. Each multivariate analysis employed the PROC LOGISTIC DESCENDING command.

DESCRIPTION OF THE SAMPLE

This descriptive report of Add Health findings begins with a demographic and social portrait of the sample. This is followed by frequency distributions of the dependent and independent variables, which is used in the next chapter to test the hypotheses for acceptance or rejection.

Sample Description by Demographics

The sample consisted of 6,504 parents. Most were female (93 %, n = 5,125), while only 7% of the parents (n = 360) were male. Of all parents, 48% (n = 3,147) had sons while 52% (n = 3,356) had daughters. About 57% (n = 3,693) of the parents had children that were 16 years of age or younger, while the remaining 43% (n = 2,811) had youth that were over the age of 16.

Only 15% of the sample had less than a 12^{th}-grade education (n = 861). Eighty-five percent (n = 4,752) had attained at least a high school diploma or its equivalent.

Less than half of the respondents (47%, n = 2,296) had household incomes that totaled less than $35,000 per year, while 53% report annual incomes of at least $35,000.

Most respondents were married (70%). Thirty percent (n = 1683) reported being widowed, never married, or divorced.

Most of the respondents were identified as White by the interviewer (72%, n = 3,958). Blacks made up 23% of the sample (n = 1,261), and Others comprised 4.76% (n = 261) of the respondents.

Table 1. Summary of sample demographics

Characteristics	Frequency (n)	Percent (%)
Child's age		
>=16	3733	57.42
>16	2768	42.58
Total	6501	100
Child's sex		
Male	3147	48.39
Female	3356	51.61
Total	6503	100
Parent's education		
< High school graduate	861	15.34
=>High school or GED	4752	84.66
Total	5613	100
Household income		
<=$34,999	2,296	46.58
>=$35,000	2,633	53.42
Total	4,929	100
Marital status		
Married	3955	70.15
Not married	1683	29.85
Total	5638	100
Parent's race		
White	3958	72.23
Black	1261	23.01
Other	261	4.76
Total	5480	100
Parent's sex		
Male	360	6.6
Female	5125	93.4
Total	5485	100

The National Longitudinal Survey of Adolescent Health, 1996.

Sample Description by Parental Beliefs

Almost one quarter (23.5%, n = 1,208) of the parents believed that it would embarrass the adolescent to engage in parent-teen communication about sexual issues. Seventy-seven percent of the parents (n = 3,933) reported that they do not perceive such a barrier.

Most respondents (92%, n = 4,946) believed that the teen needed to have sexual information provided by the parent. Only about eight 8% (n = 4,946) believed that teens could get the same information from other sources.

Most respondents (90%, n = 4,867) thought that they were capable of discussing sexual issues with their teens with minimal difficulty. The other 10% of parents (n = 529) believed that the task would be difficult.

About 90% of the parents (n = 4,742) disapproved of their adolescent having sex at the time of the study. Only 10% (n = 529) approved of their teens engaging in coitus.

Interestingly, most (79%, n = 4,323) of the parents believed that their child was not sexually active. Only 21% (n = 1,124) believed that their child had experienced sexual intercourse.

Sample Description by Parent-Teen Communication Patterns

About 90% of the parents (n = 5,048) reported talking to teens about sexual intercourse and the negative or bad things that would happen if he got someone (she got) pregnant. However, 10% of parents (n = 582) reported not talking to teens at all about pregnancy.

Table 2. Summary of sample by independent variables

Characteristics	Frequency (n)	Percent (%)
Believe that it would embarrass teen if discussed sexual issues (Barrier)		
No barrier	3933	76.50
Barrier	1208	23.50
Total	5141	100
Believe that child needs sexual information from parent (Benefit)		
No benefit	413	7.71
Benefit	4946	92.29
Total	5359	100
Believe it would be difficult to discuss sex with child (Efficacy)		
No efficacy	4867	90.20
Efficacy	529	9.80
Total	5396	100
Disapprove of adolescent having sex now (Severity)		
No severity	529	10.04
Severity	4742	89.96
Total	5271	100
Believe child is having intercourse (Susceptibility)		
No susceptibility	4323	79.36
Susceptibility	1124	20.64
Total	5447	100

The National Longitudinal Survey of Adolescent Health, 1996.

More parents reported discussing sexual intercourse and the dangers of getting an STD than pregnancy. Ninety-three percent of parents (n = 5,215) discussed the issue; only 7% (n=415) did not discuss STDs at all.

Fewer parents discussed sexual intercourse and respect than any of the other sexual topics. Eighty percent of parents (n = 4,478) discussed this issue with their teens, while a whopping 20% of parents (n = 1,1139) never discussed sexual respect.

Eighty-seven percent of parents (n = 4,912) talked to their teens about his/her having sexual intercourse and the moral issues of not having sexual intercourse. Thirteen percent of parents (n = 709) did not discuss sexual intercourse and morality with their teens.

Table 3. Summary of sample by dependent variables

Characteristics	Frequency (n)	Percent (%)
Talked with teen about pregnancy		
No discussion	582	10.34
Discussion	5048	89.66
Total	5630	100
Talked with teen about stds		
No discussion	415	7.37
Discussion	5215	92.63
Total	5630	100
Talked with teen about sex and respect		
No discussion	1139	20.28
Discussion	4478	79.72
Total	5617	100
Talked with teen about sex and morality		
No discussion	709	12.61
Discussion	4912	87.39
Total	5271	100

The National Longitudinal Survey of Adolescent Health, 1996.

RESULTS

This chapter provides the results of the study. The original hypotheses of this study are restated in the form of null hypotheses. The results of the bivariate or multivariate analyses are presented for each hypothesis. A finding of acceptance or rejection of the null hypotheses is determined.

Test of Hypothesis One

The first research hypothesis proposed that a negative relationship exists between parental perceptions of barrier to parent-teen discussions and parent-teen discussions about A) pregnancy, B) sexually transmitted diseases, C) sexual respect, and D) sexual morality. The null hypothesis is that perceived barrier and parent-teen communication about sexual issues are statistically independent.

Table 4 shows the joint distribution of data for parental perceptions of barrier to sexual communication and the reported level of parent-teen communication about pregnancy. Only 77% of those parents that perceived a barrier engaged in conversations about pregnancy with their teen. However, a whopping 95% of parents who did not perceive a barrier to sexual discussion spoke with their teen about pregnancy.

Table 4. Barrier by pregnancy talk in percentages

	Pregnancy Talk	No Pregnancy Talk	Total
Barrier	77.22	22.78	100
No barrier	94.53	5.47	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,114

Table 5 shows the results of the statistical tests for the relationship between barrier and pregnancy talk. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived barrier and parent-teen communication about pregnancy. The odds ratio (OR = 0.1963) suggests that the odds that a parent who perceives a barrier will discuss pregnancy with their teen is about one-fifth the odds of a parent who does not perceive such a barrier.

Table 5. Statistical tests for barrier by pregnancy talks

Significance Test			Measure of Association		
Chi-square	P-value	DF	Odds ratio	95% confidence limits	
319.1642	<0.001	1	0.1963	0.1619	0.2380

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,114

Table 6 shows the joint distribution of data for the parental perceptions of barrier to sexual communication and the reported level of parent-teen communication about sexually transmitted diseases. About 83% of those parents that perceived a barrier to sexual discussion engaged in conversations about sexually transmitted diseases with their teen. However, a larger proportion (96%) of the parents who did not perceive a barrier to sexual discussion spoke with their teen about STDs.

Table 6. Barrier by STD talk in percentages

	STD Talk	No STD Talk	Total
Barrier	82.70	17.30	100
No barrier	96.35	3.65	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,115

Table 7 shows the results of the statistical tests for the relationship between barrier and STD talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived barrier and parent-teen communication about sexually transmitted diseases. The odds ratio (OR = 0.1813)

suggests that the odds that a parent who perceives a barrier will discuss sexually transmitted diseases with their teen is about 1/6 the odds of a parent who does not perceive such a barrier.

Table 7. Statistical tests for barrier by STD talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
268.0692		1	0.1813	0.1449	0.2268

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,115

Table 8 shows the joint distribution of data for the parental perceptions of barrier to sexual communication and the reported level of parent-teen communication about sex and respect. Only 66% of those parents that perceived a barrier engaged in conversations about sexual respect with their teen. This is compared to about 85% of the parents who did not perceive a barrier to sexual discussion and spoke with their child about respect.

Table 8. Barrier by respect talk in percentages

	Respect Talk	No Respect Talk	Total
Barrier	66.17	33.83	100
No barrier	84.81	15.19	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,101

Table 9 shows the results of the statistical tests for the relationship between barrier and sexual respect talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived barrier and parent-teen communication about sex and respect. The odds ratio (OR = 0.3502) suggests that the odds that a parent who perceives a barrier will discuss sexual respect with their teen is about one-third the odds of a parent who does not perceive such a barrier.

Table 9. Statistical tests for barrier by respect talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
202.3735	<0.001	1	0.3502	0.3020	0.4062

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,101

Table 10 shows the joint distribution of data for the parental perceptions of barrier to sexual communication and the reported level of parent-teen communication about sex and morality. While only 75% of the parents who perceived a barrier to parent-teen communication about sexual issues spoke with their teens about sexual morality, about 92% of those parents who perceived a barrier spoke with their teens about sexual morality.

Table 10. Barrier by morality talk in percentages

	Morality Talk	No Morality Talk	Total
Barrier	75.12	24.88	100
No barrier	91.83	75.12	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,114

Table 11 shows the results of the statistical tests for the relationship between barrier and sexual morality talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived barrier and parent-teen communication about sex and morality. The odds ratio (OR = 0.2686) suggests that the odds that a parent who perceives barrier will discuss sexual morality with their teen is about 1/4 the odds of a parent who does not perceive such a barrier.

Table 11. Statistical tests for barrier by morality talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
241.2773	<0.001	1	0.2686	0.2257	0.3196

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,114

The null hypothesis of independence between perceived barrier and parent-teen communication about sexual issues is rejected. Parental perception of barrier is significantly related to parent-teen communication about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

Test of Hypothesis Two

The second research hypothesis proposed a positive relationship between perceived benefit of parent-teen discussions about sex and parent-teen discussions about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

The null hypothesis is that perceived benefit and parent-teen communication about sexual issues are statistically independent.

Table 12 shows the joint distribution of data for the parental perceptions of benefit of sexual communication and the reported level of parent-teen communication about pregnancy. While 92% of the parents who believed that their teens would benefit from parent-teen communication about sexual issues spoke with their teens about pregnancy, only 70% of those parents who believed that their teens would not benefit engaged in such discussions about pregnancy.

Table 12. Benefit by pregnancy talk in percentages

	Pregnancy Talk	No Pregnancy Talk	Total
Benefit	92.17	7.83	100
No benefit	69.68	30.32	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,336

Table 13 shows the results of the statistical tests for the relationship between benefit and pregnancy talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived benefit and parent-teen communication about pregnancy. The odds ratio (OR = 5.1185) suggests that the odds of a parent discussing pregnancy with their teen are 5.12 times higher for those parents who perceive a benefit than for those who do not perceive a benefit.

Table 13. Statistical tests for benefit by pregnancy talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
220.8466	<0.001	1	5.1185	4.0463	6.748

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,336

Table 14 shows the joint distribution of data for parental perceptions of the benefit of sexual communication and the reported level of parent-teen communication about sexually transmitted diseases. About 95% of parents perceiving the benefit of sexual discussions spoke with their teens about sexually transmitted disease. However, only about 74% of parents who did not believe their teens would significantly benefit from such discussions spoke with their child about sexually transmitted disease.

Table 14. Benefit by STD talk in percentages

	STD Talk	No STD Talk	Total
Benefit	94.80	5.20	100
No benefit	73.84	26.12	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,336

Table 15 shows the results of the statistical tests for the relationship between benefit and STD talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived benefit and parent-teen communication about sexually transmitted diseases. The odds ratio (OR = 6.4647)

suggests that the odds of a parent discussing sexually transmitted diseases with their teen are about 6.5 times higher for those parents who perceive a benefit than for those who do not perceive a benefit.

Table 15. Statistical tests for benefit by STD talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
261.8228	<0.001	1	6.4647	5.0153	8.3330

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,336

Table 16 shows the joint distribution of data for the parental perceptions of benefit of sexual communication and the reported level of parent-teen communication about sex and respect. About 82% of the parents who perceived parent-teen communication about sexual relations as beneficial discussed sexual respect with their teens. Conversely, only 66% of those who did not believe such discussions to be beneficial talked with their teens about sexual respect.

Table 16. Benefit by respect talk in percentages

	Respect Talk	No Respect Talk	Total
Benefit	81.79	18.21	100
No benefit	65.93	81.79	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,322

Table 17 shows the results of the statistical tests for the relationship between benefit and sexual respect talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived benefit and parent-teen communication about sex and respect. The odds ratio (OR = 2.304) suggests that the odds of a parent discussing sexual respect with their teen are 2.304 times higher for those parents who perceive a benefit than for those who do not perceive a benefit.

Table 17. Statistical tests for benefit by respect talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
60.4988	<0.001	1	2.304	1.8674	2.8832

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,322

Table 18 shows the joint distribution of data for the parental perceptions of benefit of sexual communication and the reported level of parent-teen communication about sex and morality. Nearly 90% of parents who believed that parent-teen discussions about sexual issues benefited teens talked with their teens about sexual morality. However, only 69% of those parents who believed that such discussions were not beneficial talked with their teens about sexual morality.

Table 18. Benefit by morality talk in percentages

	Morality Talk	No Morality Talk	Total
Benefit	89.86	10.14	100
No benefit	68.70	31.30	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,330

Table 19 shows the results of the statistical tests for the relationship between benefit and sexual morality talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived benefit and parent-teen communication about sex and morality. The odds ratio (OR = 4 .0367) suggests that the odds of a parent discussing morality with their teen are about four times higher for those parents who perceive a benefit than for those who do not.

Table 19. Statistical tests for benefit by morality talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
162.8220	<0.001	1	4.0367	3.2118	5.0733

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,330

The null hypothesis of independence between perceived benefit and parent teen communication about sexual issues is rejected. Parental perception of benefit is significantly related to parent-teen communication about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

Test of Hypothesis Three

The third research hypothesis proposed a positive relationship between parental perceptions of efficacy in parent-teen discussions and parent-teen discussions about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

The null hypothesis is that perceived efficacy and parent-teen communication about sexual issues are statistically independent.

Table 20 shows the joint distribution of data for the parental perceptions of efficacy in sexual communication and the reported level of parent-teen communication about pregnancy. While 93% of parents who perceived self-efficacy in discussing sexual issues with teens engaged in talks about pregnancy with their teens, only about 66% of those parents who did not perceive self-efficacy engaged in the same discussions with their teen.

Table 20. Efficacy by pregnancy talk in percentages

	Pregnancy Talk	No Pregnancy Talk	Total
Efficacy	92.92	7.08	100
No efficacy	65.52	34.48	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,366

Table 21 shows the results of the statistical tests for the relationship between perceived efficacy and pregnancy talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived efficacy and parent-teen communication about pregnancy. The odds ratio (OR = 6.9066) suggests that the odds of a parent discussing pregnancy with their teen are almost seven times higher for those parents who perceive self-efficacy than for those who do not perceive self-efficacy.

Table 21. Statistical tests for efficacy by pregnancy talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
402.2244	<0.001	1	6.9066	5.5913	8.5311

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,366

Table 22 shows the joint distribution of data for the parental perceptions of efficacy in sexual communication and the reported level of parent-teen communication about sexually transmitted diseases. While 95% of parents who perceived self-efficacy in sexual discussions with their teen spoke with their teen about sexually transmitted diseases, only 71% of those that did not perceive such efficacy discuss STDs with their teen.

Table 22. Efficacy by STD talk in percentages

	STD Talk	No STD Talk	Total
Efficacy	95.44	4.56	100
No efficacy	70.88	29.12	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,368

Table 23 shows the results of the statistical tests for the relationship between efficacy and STD talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived efficacy and parent-teen

communication about sexually transmitted diseases. The odds ratio (OR = 8.5973) suggests that the odds of a parent discussing sexually transmitted diseases with their teen are about 8.6 times higher for those parents who perceive self-efficacy than for those who do not perceive self-efficacy.

Table 23. Statistical tests for efficacy by STD talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
439.5610	<0.001	1	8.5973	6.8165	10.8432

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,368

Table 24 shows the joint distribution of data for the parental perceptions of efficacy in sexual communication and the reported level of parent-teen communication about sex and respect. About 82% of parents perceiving self-efficacy discussed sexual respect with their teen while only about 61% of those that did not perceive efficacy spoke with their teen about sexual respect.

Table 24. Efficacy by respect talk in percentages

	Respect Talk	No Respect Talk	Total
Efficacy	82.38	17.62	100
No efficacy	60.80	39.20	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,354

Table 25 shows the results of the statistical tests for the relationship between efficacy and sexual respect talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived efficacy and parent-teen communication about sex and respect. The odds ratio (OR = 3.015) suggests that the odds of a parent discussing sex and respect with their teen are about times higher for those parents who perceive self-efficacy than for those who do not perceive self-efficacy.

Table 25. Statistical tests for efficacy by respect talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
133.8199	<0.001	1	3.0150	2.4919	3.6477

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,354

Table 26 shows the joint distribution of data for the parental perceptions of efficacy in sexual communication and the reported level of parent-teen communication about sex and morality. About 90% of the parents perceiving self-efficacy discussed sexual morality with their teen, while only about 65% of those parents who did not perceive such efficacy discuss sexual morality with their teen.

Table 26. Efficacy by morality talk in percentages

	Morality Talk	No Morality Talk	Total
Efficacy	90.35	9.65	100
No efficacy	65.33	34.67	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,359

Table 27 shows the results of the statistical tests for the relationship between efficacy and sexual morality talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived efficacy and parent-teen communication about sex and morality. The odds ratio (OR = 4.966) suggests that the odds of a parent discussing sex and morality with their teen are about 5 times higher for those parents who perceive self-efficacy than for those who do not.

Table 27. Statistical tests for efficacy by morality talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
277.4613	<0.001	1	4.9669	4.0506	6.0906

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,359

The null hypothesis of independence between perceived efficacy and parent teen communication about sexual issues is rejected. Parental perception of efficacy is significantly related to parent-teen communication about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

Test of Hypothesis Four

The fourth research hypothesis proposed a positive relationship between parental perceptions of the severity of teen sexual consequences and parent-teen discussions about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

The null hypothesis is that perceived severity and parent-teen communication about sexual issues are statistically independent.

Table 28 shows the joint distribution of data for the parental perceptions of severity and the reported level of parent-teen communication about pregnancy. Nearly 90% of the parents who perceived severity and 90% of the parents who did not perceive severity engaged their teen in discussions about pregnancy.

Table 28. Severity by pregnancy talk in percentages

	Pregnancy Talk	No Pregnancy Talk	Total
Severity	89.67	10.33	100
No severity	90.11	9.89	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,249

Table 29 shows the results of the statistical tests for the relationship between severity and pregnancy talks. The chi-square test supports the null hypothesis ($p = 0.7492$) of independence. There is no significant relationship between perceived severity and parent-teen communication about pregnancy. The odds ratio ($OR = 0.9520$) and associated confidence interval ($CI = 0.7044 - 1.2867$) support the chi-square finding of no association.

Table 29. Statistical tests for severity by pregnancy talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
0.1022	0.7492	1	0.9520	0.7044	1.2867

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,249

Table 30 shows the joint distribution of data for the parental perceptions of severity and the reported level of parent-teen communication about sexually transmitted diseases. Nearly 93% of the parents who perceived severity and 91% of the parents who did not perceive severity engaged their teen in discussions about pregnancy.

Table 30. Severity by STD talk in percentages

	STD Talk	No STD Talk	Total
Severity	92.86	7.14	100
No severity	90.89	9.11	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,247

Table 31 shows the results of the statistical tests for the relationship between severity and STD talks. The chi-square test supports the null hypothesis of independence ($p = 0.1003$). There is no significant relationship between perceived severity and parent-teen communication about sexually transmitted diseases. The odds ratio ($OR = 1.3033$) and associated confidence interval ($CI = 0.9495 - 1.7890$) support the chi-square finding of no association.

Table 31. Statistical tests for severity by STD talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
2.7014	<0.1003	1	1.3033	0.9495	1.7890

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,247

Table 32 shows the joint distribution of data for the parental perceptions of severity and the reported level of parent-teen communication about sex and respect. About 80% of the parents that perceived severity and about 80% of those that did not discussed sexual respect with their teens.

Table 32. Severity by respect talk in percentages

	Respect Talk	No Respect Talk	Total
Severity	80.28	19.72	100
No severity	79.28	20.72	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,236

Table 33 shows the results of the statistical tests for the relationship between severity and sexual respect talks. The chi-square test supports the null hypothesis ($p = 0.5859$) of independence. There is no significant relationship between perceived severity and parent-teen communication about sex and respect. The odds ratio (1.0639) and associated confidence interval (0.8514 - 1.3293) support the chi-square finding of no association.

Table 33. Statistical tests for severity by respect talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
0.2968	<0.5859	1	1.0639	0.8415	1.3293

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,236

Table 34 shows the joint distribution of data for the parental perceptions of severity and the reported level of parent-teen communication about sex and morality.

While about 88% of the parents who perceived severity discussed sexual morality with their teens, 84% of those who did not perceive severity discussed sexual morality with their teen.

Table 34. Severity by morality talk in percentages

	Morality Talk	No Morality Talk	Total
Severity	88.38	11.62	100
No severity	84.03	15.97	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,243

Table 35 shows the results of the statistical tests for the relationship between severity and sexual morality talks. The chi-square test rejects the null hypothesis ($p = 0.0036$) of no difference. There is a significant relationship between perceived severity and parent-teen communication about sex and morality. The odds ratio ($OR = 1.445$) suggests that the relationship is weak. The odds of a parent discussing sex and morality with their teen are 1.45 times higher for those parents who perceive severity than those who do not perceive severity.

Table 35. Statistical tests for severity by morality talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
8.4548	0.0036	1	1.4458	1.1263	1.8559

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,243

The null hypothesis of independence between parent-teen communication and severity is supported with regards to parent-teen communication about pregnancy, sexually transmitted disease and sexual respect. There is no significant relationship between parental perception of severity and parent-teen communication about

- pregnancy,
- sexually transmitted diseases, and
- sexual respect.

However, a significant relationship exists between perceived severity and parental discussions of morality.

Test of Hypothesis Five

The fifth research hypothesis proposed a positive relationship between parental perceptions of teen susceptibility to the unwanted consequences of sexual activity and parent-teen discussions about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

The null hypothesis is that perceived susceptibility and parent-teen communication about sexual issues are statistically independent.

Table 36 shows the results of the statistical tests for the relationship between susceptibility and pregnancy talks. While nearly 98% of those parents who perceived teen susceptibility discussed pregnancy with their teen, about 88% of those parents who did not perceive susceptibility discussed pregnancy with their teen.

Table 36. Susceptibility by pregnancy talk in percentages

	Pregnancy Talk	No Pregnancy Talk	Total
Susceptibility	97.40	2.60	100
No susceptibility	87.86	12.14	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,407

The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived susceptibility and parent-teen communication about sex and morality. The odds ratio (OR = 5.1738) suggests that the odds of a parent discussing pregnancy with their teen are about 5 times higher for those

parents who perceive that their teens are susceptible than for those who do not perceive such susceptibility.

Table 37. Statistical tests for susceptibility by pregnancy talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
88.1194	<0.001	1	5.1738	3.5382	7.5656

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,407

Table 38 shows the joint distribution of data for the parental perceptions of susceptibility and the reported level of parent-teen communication about sexually transmitted diseases. About 97% of parents who perceived their teens as susceptible discussed sexually transmitted diseases with their teen. Similarly, about 91% of parents who did not perceive susceptibility discussed sexually transmitted diseases with their teens.

Table 38. Susceptibility by STD talk in percentages

	STD Talk	No STD Talk	Total
Susceptibility	97.94	2.06	100
No susceptibility	91.28	8.72	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,406

Table 39 shows the results of the statistical tests for the relationship between susceptibility and STD talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived susceptibility and parent-teen communication about sexually transmitted diseases. The odds ratio (OR = 4.533) suggests that the odds of a parent discussing sexually transmitted diseases with their teen are about 4.5 times higher for those parents who perceive that their teens are susceptible than for those who do not perceive such susceptibility.

Table 39. Statistical tests for susceptibility by STD talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
57.5733	<0.001	1	4.533	2.9597	6.9436

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,406

Table 40 shows the joint distribution of data for the parental perceptions of susceptibility and the reported level of parent-teen communication about sex and respect. While about 85% of parents who perceived susceptibility discussed sexual respect with their teens, only 79% of those that did not perceive susceptibility engaged their teens in discussions about sexual respect.

Table 40. Susceptibility by respect talk in percentages

	Respect Talk	No Respect Talk	Total
Susceptibility	84.98	15.02	100
No susceptibility	78.50	21.50	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,395

Table 41 shows the results of the statistical tests for the relationship between susceptibility and sexual respect talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived susceptibility and parent-teen communication about sex and respect. The odds ratio (OR = 1.5502) suggests that the odds of a parent discussing sex and respect with their teen are about 1.5 times higher for those parents who perceive that their teens are susceptible than for those who do not perceive such susceptibility.

Table 41. Statistical tests for susceptibility by respect talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
23.0646	<0.001	1	1.5502	1.2949	1.8558

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,395

Table 42 shows the joint distribution of data for the parental perceptions of susceptibility and the reported level of parent-teen communication about sex and morality. While 91% of those parents who perceived susceptibility discussed sexual morality with their teen, 87% of those that did not perceive susceptibility discussed sexual relations with their teen.

Table 42. Susceptibility by morality talk in percentages

	Respect Talk	No Respect Talk	Total
Susceptibility	91.10	8.90	100
No susceptibility	86.63	13.37	100

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,398

Table 43 shows the results of the statistical tests for the relationship between susceptibility and sexual morality talks. The chi-square test rejects the null hypothesis ($p < 0.001$) of no difference. There is a significant relationship between perceived susceptibility and parent-teen communication about sexually transmitted diseases. The odds ratio (OR = 1.5791) suggests that the odds of a parent discussing sex and morality with their teen are about 1.5 times higher for those parents who perceive that their teens are susceptible than for those who do not perceive such susceptibility.

Table 43. Statistical tests for susceptibility by morality talk

Significance Test			Measure of Association		
Chi-Square	p-value	DF	Odds Ratio	95% Confidence Limits	
16.1588	<0.001	1	1.5791	1.2617	1.9762

The National Longitudinal Survey of Adolescent Health, 1996.
n = 5,398

The null hypothesis of independence between perceived susceptibility and parent teen communication about sexual issues between is rejected. Parental perception of susceptibility is significantly related to parent-teen communication about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

Test of Hypothesis Six

The sixth hypothesis proposed that the Health Belief Model would be a significant predictor of parent-teen communication about sexual issues. More specifically, it was hypothesized that a statistical model that included parental perceptions of barrier, benefit, efficacy, severity and susceptibility would explain parent-teen discussions about

- pregnancy,
- sexually transmitted diseases,
- sexual respect, and
- sexual morality.

Logistic regression analysis was executed to test this hypothesis.

Demographic Variables

Several of the demographic factors used to describe the sample were significantly related to the outcome variables. Table 44 provides the odds ratios and the corresponding probability values for each relationship. Those demographic variables that were found to be significant are included as control variables in the logistic regression analyses of each outcome variable. Child's age, child's sex, parent's level of education, marital status, gender, black race, and other race are significantly associated with parent-teen discussion of pregnancy and, therefore, were included in the analysis. For discussions of sexually transmitted diseases, child's age, child's sex, parent's education, income, marital status, sex, black race, and other race are significantly related and were included in the model. Child's sex, parent's income, marital status, sex, white race and black race were significantly related to talks about sex and respect and were included in the model.

Discussions of morality were significantly related to the child's age and sex as well as the parent's education, sex, black race, and other race. These variables were included in the analysis of sexual morality.

Table 44. Odds ratios of demographic variables by dependent variables

	Pregnancy Talk	STD Talk	Respect Talk	Morality Talk
Child's Age	1.4181**	1.4095**	1.0588	1.2291*
	n=5628	n=5628	n=5615	n=5619
Sex of Child	1.9747**	1.4266**	2.2002**	2.0017**
	n=5630	n=5630	n=5617	n=5621
Education	1.6246**	2.1787**	1.1182	1.5691**
	n=5519	n=5519	n=5506	n=5510
Income	0.9672	0.8006*	1.2626**	0.9306
	n=4872	n=4874	n=4861	n=4867
Marital Status	0.7256**	0.7336**	0.8247*	1.1344
	n=5541	n=5541	n=5528	n=5532
Sex of Parent	1.3525	1.4706*	1.5134**	2.3584**
	n=5391	n=5392	n=5379	n=5382
White	0.9682	0.9030	0.5654**	0.8807
	n=5389	n=5389	n=5378	n=5383
Black	1.4870**	1.6089**	2.1671**	1.4936**
	n=5389	n=5389	n=5378	n=5383
Other	0.3862**	0.4091**	0.7458	0.4837**
	n=5389	n=5389	n=5389	n=5383

National Longitudinal Study of Adolescent Health, 1995
Significance Level * p = .05; ** p = .01.

Pregnancy Talks

Part A of Hypothesis Six suggested that the Health Belief Model would be a significant predictor of parent-teen communication about sex and pregnancy. The findings of the logistic regression analysis are displayed in Table 45. Evidence is provided here to support the contention that the Health Belief Model is a significant predictor of parent-teen communication about sex and pregnancy. Four of the five variables (barrier, benefit, efficacy, and susceptibility) are significant in the model.

Severity was not a significant predictor of parent-teen communication about sex and sexually transmitted diseases.

Controlling for the child's sex and the parent's race, findings suggest that parents who believe that sexual discussions will embarrass their teens are only about one-third as likely as those who do not perceive this barrier to discuss sex and STDs with their teens. Parents who perceive that their children need the information that they can provide in a sexual discussion are about twice as likely to discuss sex and pregnancy with their teens when compared to parents who do not see such discussions as necessary for the adolescent. Parents who report that they are able to discuss sexual issues with little difficulty are 2.7 times more likely to discuss sex and pregnancy when compared to those who do not perceive such self-efficacy. Parents who believe that their teens are sexually active are a 4.5 times more likely to discuss sex and pregnancy than parents who do not believe that their teens are susceptible to the unwanted consequences of teen sexual activity.

Parents of girls are 1.7 times more likely to discuss sex and pregnancy than parents with boys. Similarly, Black and White parents are twice as likely as other parents to discuss sex and pregnancy with their teens.

STD Talks

Part B of Hypothesis Six suggested that the Health Belief Model would be a significant predictor of parent-teen communication about sex and sexually transmitted diseases. The findings of a logistic regression analysis are displayed in Table 46. Evidence is provided here to support the contention that the Health Belief Model is a significant predictor of parent-teen communication about sex and sexually transmitted

Table 45. Logistic regression results predicting reported parent-teen communication about sex and pregnancy

	Model 1			Model 2			Model 3		
Variable	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odd Ratio
Intrcpt	1.0088	0.1835	----	0.6948	0.2485	----	0.8083	0.2485	----
BARRIER	-1.0521**	0.1282	0.349	-0.9802**	0.1325	0.375	-1.0096**	0.1317	0.364
BENEFIT	-0.7436**	0.1651	2.103	0.6901**	0.1765	1.994	0.7344**	0.1697	2.084
EFFICAC	1.0365**	0.1592	2.819	0.9984**	0.1654	2.714	1.002**	0.1628	2.724
SEVERIT	----	----	----	----	----	----	----	----	----
SUSCEPT	1.4824**	0.2231	4.403	1.4069**	0.2400	4.083	1.5120**	0.2355	4.536
AGE	----	----	----	0.1933	0.1271	1.213	----	----	----
CHSEX	----	----	----	0.5577**	0.1180	1.747	0.5679**	0.1173	1.763
EDUC	----	----	----	0.1600	0.1553	1.174	----	----	----
INCOME	----	----	----	----0.00076**	----	----	----0.00076**	----	----
MARSTAT	----	----	----	-0.1015	0.1384	0.903	----	----	----
PASEX	----	----	----	----	----	----	----	----	----
BLACK	----	----	----	0.1456	0.1554	1.157	----	----	----
WHITE	----	----	----	----	----	----	----	----	----
OTHERACE				-0.5238**	0.2251	0.592	-0.5479*	0.2235	0.578

National Longitudinal Study of Adolescent Health, 1995
Significance Levels: * p=.05; ** p=.01.
Model 1 chi square 390.7344; df=4, p=<0.0001; (n=4,595)
Model 2 chi square 398.2705; df=10, p=<0.0001; (n=4,363)
Model 3 chi square 403.2151; df=6, p=<0.0001; (n=4,399)

diseases. Four of the five variables (barrier, benefit, efficacy and susceptibility) are significant in the model. Severity was not a significant predictor of parent-teen communication about sex and STDs.

Controlling for education and race, findings suggest that parents who believe that sexual discussions will embarrass their teens are only about one-third as likely as those who do not perceive this barrier to discuss sex and STDs with their teens. Parents who perceive that their children need the information that they can provide in a sexual discussion are 2 times more likely to discuss sex and STDs. Parents who report that they are able to discuss sexual issues with little difficulty are 2.8 times more likely to discuss sex and STDs. Parents who believe that their teens are sexually active are 4.4 times more likely to discuss sex and STDs than parents who do not believe that their teens are sexually active.

Black and white parents are twice as likely to discuss sex and STDs with their teens than parents of other races. Parents with a high school diploma are 1.5 times more likely than parents without a diploma to discuss sex and STDs.

Respect Talks

Part C of Hypothesis Six suggested that the Health Belief Model would be a significant predictor of parent-teen communication about sex and respect. The findings of a logistic regression analysis are displayed in Table 47. Evidence is provided here to support the contention that the Health Belief Model is a significant predictor of parent-teen communication about sex and respect. Three of the five variables (barrier, benefit and efficacy) are significant in the model. Severity and susceptibility were not significant predictors of parent-teen communication about sex and respect.

Table 46. Logistic regression results predicting reported parent-teen communication about sex and sexually transmitted disease

	Model 1			Model 2			Model 3		
Variable	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odds Ratio
INTRCPT	1.1816	0.2015	----	0.7621	0.4048	----	1.1571	0.2233	----
BARRIER	-1.0053**	0.1509	0.349	-1.0442**	0.1680	0.352	-1.0819**	0.1530	0.339
BENEFIT	0.8751**	0.1778	2.399	0.7085**	0.2169	2.031	0.7074**	0.1900	2.029
EFFICAC	1.1925**	0.1764	3.295	1.1016**	0.1972	3.009	1.0481**	0.1824	2.852
SEVERIT	----	----	----	----	----	----	----	----	----
SUSCEPT	-0.8354**	0.2662	4.428	1.5039	0.3403	4.499	1.4933**	0.2746	4.452
AGE	----	----	----	0.4013*	0.1659	1.494	----	----	----
CHSEX	----	----	----	0.2277	0.1486	1.256	----	----	----
EDUC	----	----	----	0.4221**	0.1944	1.525	0.3992*	0.1644	1.491
INCOME	----	----	----	0.1029	0.1705	1.108	-----	----	----
MARSTAT	----	----	----	-0.3345	0.1931	0.716	----	----	----
PASEX	----	----	----	0.2735	0.2902	1.315	----	----	----
BLACK	----	----	----	0.3058	0.2099	1.358	----	----	----
OTHERACE	----	----	----	-0.5428*	0.2720	0.581	-0.6217**	0.2407	0.537

National Longitudinal Study of Adolescent Health, 1995
Significance Level * p=.05; ** p=.01.
Model 1 chi square 362.4472 df=4, p=<0.0001; (n=4,596)
Model 2 chi square 300.8917; df=12, p=<0.0001; (n=3,759)
Model 3 chi square 339.0053. df=6, p=<0.0001; (n=4,372)

Controlling for the child's sex as well as the parent's income and race, findings suggest that parents who believe that sexual discussions will embarrass their teens are only about one-half as likely as those who do not perceive this barrier to discuss sex and STDs with their teens. Parents who believe that their teens need them to provide sexual information are 1.4 times more likely to discuss sexual issues with their teens than those who do not perceive such a benefit. Parents who report that they are able to discuss sexual issues with little difficulty and parents who believe that their teens are sexually active are 1.6 times more likely to discuss sex and respect than other parents.

Parents of girls are twice as likely to discuss sex and respect with their teen than are parents of boys. Interestingly, lower income parents are more likely to discuss sex and respect with their teens. Black parents are twice as likely as other parents to discuss sex and respect with their teen.

Morality Talks

Part D of Hypothesis Six suggested that the Health Belief Model would be a significant predictor of parent-teen communication about sex and morality. The findings of a logistic regression analysis are displayed in Table 48. Evidence is provided here to support the contention that the Health Belief Model is a significant predictor of parent-teen communication about sex and morality. All of the five variables (barrier, benefit, efficacy, severity and susceptibility) are significant in the final model.

Controlling for the child's sex and the parent's sex and race, findings suggest that parents who believe that sexual discussions will embarrass their teens are only about one-half as likely as those who do not perceive this barrier to discuss sex and STDs with their

Table 47. Logistic regression results predicting reported parent-teen communication about sex and respect

	Model 1			Model 2			Model 3		
Variable	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odds Ratio
INTRCPT	0.9140	0.1567	----	0.4271	0.3042	----	0.5447	0.1768	----
BARRIER	-0.8079**	0.0947	0.446	-0.6656**	0.1060	0.514	-0.6784**	0.1019	0.507
BENEFIT	0.3390*	0.1429	1.404	0.3784*	0.1684	1.460	0.4111**	0.1545	1.509
EFFICAC	0.4684**	0.1368	1.597	0.5112**	0.1533	1.667	0.4940**	0.1462	1.639
SEVERIT	----	----	----	----	----	----	----	----	----
SUSCEPT	0.3170**	0.1032	1.373	0.1280	0.1158	1.137	----	----	----
AGE	----	----	----	----	----	----	----	----	----
CHSEX	----	----	----	0.7320**	0.0898	2.079	0.7231**	0.0861	2.061
EDUC	----	----	----	----	----	----	----	----	----
INCOME	----	----	----	-0.2832*	0.1016	0.753	-0.2709*	0.0897	0.763
MARSTAT	----	----	----	0.0606	0.1117	1.062	----	----	----
PASEX	----	----	----	0.1452	0.1738	1.156	----	----	----
BLACK	----	----	----	0.7080**	0.2364	2.030	0.7294**	0.1194	2.074
WHITE	----	----	----	-0.0828	0.2101	0.921	----	----	----

National Longitudinal Study of Adolescent Health, 1995
Significance Level * p=.05; ** p=.01.
Model 1 chi square 189.5344; df=4, p=<0.0001; (n=4,583)
Model 2 chi square 261.1659; df=10, p=<0.0001; (n=3769)
Model 3 chi square 274.8775; df=6, p=<0.0001; (n=4,025)

teens. Parents who believe that their teens need the information provided through parent-teen discussions about sexual issues are almost twice as likely to discuss issues of morality with their teens. Parents who report that they are able to discuss sexual issues with little difficulty are 2.5 times more likely to discuss sex and morality than other parents. Even more, parents who perceive severity are almost twice as likely to discuss sex and morality with their teens. Those who perceive susceptibility are 1.8 times more likely to discuss sexual morality.

Parents of girls are 2 times more likely to discuss sex and morality with their teen. Women are 1.5 times more likely than men to discuss sex and morality. Parents of teens over the age of 16 are 1.3 times more likely to discuss sexual morality. Black parents are 1.4 times as likely as non-Black parents to discuss sexual morality with their teen.

Summary

The data provides support for several of the hypotheses tested in this study. The bivariate analyses suggest that significant relationships exist between the Health Belief Model variables (barrier, benefit, efficacy, and susceptibility) and parent teen discussions about sexual issues (pregnancy, sexually transmitted diseases, respect and morality). Severity, however, was only related to discussions of morality.

Logistic regression was executed in order to test the entire model's explanatory power for each type of parent teen-communication. This multivariate analysis supports the findings of the bivariate analysis for sexual communication about pregnancy and sexually transmitted disease. The Health Belief Model is a significant predictor of parent-teen discussions about sex and pregnancy and sexually transmitted disease. However, for

Table 48. Logistic regression results predicting reported parent-teen communication about sex and morality

	Model 1			Model 2			Model 3		
Variable	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odds Ratio	Parameter	St.Error	Odds Ratio
INTRCPT	0.4968	0.2175	----	-0.6061	0.3143	----	-0.5014	0.3030	----
BARRIER	-0.9285**	0.1195	0.395	-0.8938**	0.1244	0.409	-0.8849**	0.1242	0.413
BENEFIT	0.6332**	0.1610	1.884	0.6398**	0.1737	1.896	0.6878**	0.1690	1.989
EFFICAC	0.9007**	0.1541	2.461	0.8606**	0.1613	2.364	0.9057**	0.1595	2.474
SEVERIT	0.5375**	0.1540	1.712	0.6722**	0.1637	1.958	0.6845	0.1617	1.983
SUSCEPT	0.7119**	0.1643	2.038	0.5986**	0.1767	1.820	0.5885	0.1762	1.801
AGE	----	----	----	0.2778*	0.1198	1.320	0.2797	0.1195	1.323
CHSEX	----	----	----	0.7008**	0.1115	2.015	0.6982**	0.1112	2.010
EDUC	----	----	----	0.1991	0.1453	1.213	----	----	----
INCOME	----	----	----	----	----	----	----	----	----
MARSTAT	----	----	----	----	----	----	----	----	----
PASEX	----	----	----	0.4086*	0.1986	1.505	0.3742**	0.1985	1.454
BLACK	----	----	----	0.3565*	0.1443	1.428	0.3461*	0.1438	1.414
OTHERACE	----	----	----	-0.4460*	0.2179	0.640	-0.4528	0.2185	0.636

National Longitudinal Study of Adolescent Health, 1995
Significance Level * p=.05; ** p=.01.
Model 1 chi square 299.4629 df=5, p=<0.0001; (n=4,311)
Model 2 chi square 353.5952; df=10, p=<0.0001; (n=3,984)
Model 3 chi square 363.1045; df=10, p=<0.0001; (n=4,009)

discussions of sexual respect and sexual morality, only barrier, benefit and self-efficacy surfaced as significant co-predictors.

CONCLUSIONS AND DISCUSSION

This analysis examined predictors of parent-teen discussions about four sexual issues: pregnancy, sexually transmitted diseases, sexual respect and sexual morality. Parental beliefs about the barrier to sexual discussions, the benefit of such talks, efficacy of communicating, and child's susceptibility significantly contributed to each of the predictive models. Parental perceptions of the severity of consequences only served as a significant predictor of parent-teen discussions about sexual morality.

Prevalence of Parent-Teen Communication about Sexual Issues

Most parents surveyed in this study reported discussing sexual topics with their children, at least to some extent. This finding is consistent with previous parental reports of the prevalence of parent-teen sexual communication (CDC, 1991; Jaccard et al., 1998; Newcomer & Udry, 1985). Differences in prevalence were, however, evident in the topics under study. More parents discussed the physical aspects of sexuality (pregnancy and sexually transmitted disease) than the social/emotional aspects (sexual respect and sexual morality). This finding adds support to the previous research that suggests that families are most likely to discuss the responsibilities of being a parent and avoiding sexually transmitted diseases with their teens than other topics (Dilorio et al., 1999; Jordan et al., 2000; Miller et al., 1999). In the present study, sexually transmitted diseases emerged as the most discussed topic. Ninety-three percent of parents reported discussing sexually transmitted diseases with their teens, and 90% discussed pregnancy with their teens to some degree.

Eighty-seven percent of parents reported discussing sex and morality with their teens. Discussions of sex and respect were the least discussed of the topics examined in this study. Twenty-percent of the parents reported never having discussed sex and respect with their teenaged children. Perhaps as the sexual standards of the United States have become more liberal, with premarital sex being more acceptable than it was in previous decades, fewer parents equate premarital sex with issues of social respectability. Many parents may not perceive sexual stigma as significantly harmful to their teens. As such, parents may believe that there is less of a need to discuss sex and the impact on one's social life in the sexual socialization of youth.

Parental Beliefs as Predictors of Parent-Teen Sex Talks

Barriers

Barriers emerged as the strongest predictor of parent-teen communication about pregnancy and sexually transmitted disease. This is in line with Janz and Becker' s (1984) findings. Their review of the literature on the Health Belief Model suggested that barrier is the most powerful predictors in the model.

Parents who perceive that their teens would be embarrassed by discussing sexual issues (barriers) are less likely to discuss pregnancy, sexually transmitted diseases, sexual respect and sexual morality with their teens, than were other parents. Indeed, parent comfort in discussing sexual issues may be complicated by their empathy for their teens. Parents may not want to put their teens in a position of discomfort, as they remember the awkwardness they felt when they discussed sexual issues with their own parents. This finding mirrors previous findings which suggest that discomfort and embarrassment are negatively related to parent-teen discussion about sexual issues (Aldous, 1983; Bonnell &

Caillouet, 1991; Brock & Beazley, 1995; Chilman, 1990; Crawford et al., 1993; Hockenberry-Eaton et al., 1996; Jaccard & Dittus,1991; Pick & Palos, 1985).

Benefits

The findings of this study reveal that parents who believe that family discussions about sexual issues provide teens with information that is otherwise unavailable (*benefits*) are more likely to engage in sexual discussions than parents who believe that teens can get the information somewhere else. When parents feel that they are in a position to provide teens with needed information about sexual issues, then initiate such discussions. These results are consistent with previous research which suggests that parents who feel that their teens were interested in and needed sexual information were more likely to engage in sexual discussions (Brock & Beazley, 1995; Jordan et al., 2000). Parents may be reluctant to discuss topics offering information that the teen views as inappropriate or unwanted (Rosenthal & Feldman, 1999).

Efficacy

Efficacy appears to be a strong, consistent predictor for each of the variables in the present study. This study suggests that parents who discuss sexual issues with their teens feel more confident in their ability to discuss such issues when compared to parents who do not discuss such issues. Previous research suggests that parents often feel inhibited in dealing with sexual topics because they perceive themselves to be uneducated or inarticulate with regards to sexual information (Aldous, 1983; Simanski, 1998). In an examination of parental involvement in an at-home sex education program, findings suggest that those who discussed sex with their teens believed that their sex-based knowledge was adequate. Even more, parents who talked with their teens about sexual

issues also believed that they knew how to talk with their children about (Brock & Beazley, 1995).

Severity

In the present study severity was significantly related to parent-teen discussions about sexual morality only. Parents who disapprove of their teen having sex (severity) are more likely to discuss sexual morality than other parents. Those parents who feel that it is inappropriate for teens to engage in sexual activity, may feel that they are more obligated to discuss their values with their teens in an effort to properly socialize their children with an understanding of right and wrong.

Parental perception of severity is not a significant predictor of parent-teen communication about pregnancy, sexually transmitted diseases, nor sexual respect. This finding is consistent with other research on the Health Belief Model. In 1984, Janz and Becker provided an updated critical review of the studies conducted between 1974 and 1984 that tested the Health Belief Model. Their sample of articles included 24 studies that examined preventive behavior, 19 that explored sick-role behaviors, and 3 that addressed how clinics could use the model to achieve higher rates of patient compliance. Perceived severity was the least powerful predictor across all studies and behaviors.

While severity is a historically weak predictor, perhaps other issues contributed to its' lack of significance in the present study. The measure of severity employed for this study may be invalid. Parents were asked, "How much do you disapprove of your child's having sexual intercourse at this time in his/her life?" Indeed, it can be argued that those parents who believe that the consequences are greatest would be most disapproving of teen sexual activity. Yet, this question may not accurately reflect the Health Belief

Model's conceptualization of severity. Future research aimed at predicting parent-teen communication about sexual issues may employ a more valid measure of severity. A more valid measures of severity, operationally defined as an individual's assessment of the consequences that result from teen sexual behavior, may involve the development of a scale on which parents are specifically asked questions such as the following:

- How bad would it be if your teen became pregnant or impregnated someone at this time?
- How bad would it be if your teen was infected with a sexually transmitted disease at this time?
- How bad would it be if your teen lost the respect of his/her peers because of sexual activity?
- How bad would it be if your teen violated sexual mores?

It is suggested that such measures of severity might provide more significant predictors of the various types of sexual communication when compared to the measure "How much do you approve of your child having sexual intercourse at this time?"

Nevertheless, the insignificance of the relationship between parent-teen communication about sexual issues and parental disapproval should be placed within the context of the literature. The current finding contrasts findings of previous research. In one study of adolescents and their parents, researchers found that those parents who were most disapproving of premarital sex were most likely to discuss sexual issues with their teens. Parents who sanctioned or approved of premarital sex had fewer discussions with their children (Jaccard et al., 1998).

Perhaps disapproving of teen sexual behavior is a double-edged sword that parents negotiate in one of two ways. Some parents who disapprove of teen sexual intercourse talk about the issues presented in this study in an effort to dissuade their teens from having sex. That is, they discuss the negative aspects of pregnancy, sexually and

transmitted diseases as some form of scare tactic which reinforces a "don't do it or else" type of message. On the other hand, parents who approve of their teen's sexual activity may talk about sexual issues for a different reason, that is to inform their teen's about how to protect themselves from the unwanted consequences of sex, namely, pregnancy, sexually transmitted diseases, and loss of respect. This suggests that the motive of parent-teen communication about sexual issues should be considered. It is not enough to know whether or not parents are discussing sexual issues with their teens. The body of literature on parent-teen communication lacks data on whether parents are talking about sex as a means of encouraging abstinence or safe sex. Research suggests that many parents face the dilemma of the "double standard of education" (Strong & Devault, 2001). That is, many parents who would like their teens to remain virgins until marriage but who at the same time realize that the likelihood of this is slim end up sending their children the double message of "Don't do it, but if you do, use protection." This issue must be included in future studies examining parental disapproval of teen sex and parental beliefs about teen sexuality.

Susceptibility

Findings from the present study indicate that parents who believe that their children are sexually active are more likely to discuss sexual issues with their children than parents who do not. This is consistent with findings from previous studies (Rafaeilli et al., 1998). Jaccard et al (1998) surveyed 745 African-American adolescents aged 14 to 17 and their mothers. Mothers who believed that their children were sexually active were more likely to engage in sexual discussions with them. Certainly, parents may initiate

conversations about sex because they believe that their children are in need of sexually relevant information.

Parental beliefs about whether or not one's teenager is sexually active may also have an impact on which sexual topics are discussed in the home. Fox (1980) found that the focus of mother-daughter communications differed before and after the daughter's sexual debut. The researchers speculated that before teenage girls become sexually active, most mothers attempt to prevent sexual experimentation by discussing the moral issues involved in teen sex. Once mothers know or suspect that their daughters are sexually active, they may focus more on practical matters like birth control. Similarly, believing that a child is sexually active is significantly linked to father-child discussions about the dangers of AIDS and STDs and birth control.

Interestingly, only 21% of the respondents believed that their teens were sexually active. This is surprising in light of statistics that suggest that most teens are sexually active. Strunin and Hingson (1992) found that 66% of adolescents between the ages of 16 and 19 had engaged in sexual intercourse. What causes this great discrepancy in parental perceptions of teen sexual behavior and actual teen sexual behavior? Perhaps, the age of the child is a determining factor. Ram (1975) found that most parents consider their children too young for sexual information until the age of 14 or 15. Approximately 40% of the parents in this study were questioned about their teenagers who were below the age of 16.

Another explanation may be social desirability. That is, parents who believe that their teens are sexually active may state that they do not believe that their teens are sexually active because they believe that they will be perceived as good parents if they

say that they think that their teens are virgins and bad parents if they report that they believe that their teens are active. A simpler explanation could be that parents have not asked their teens whether or not they are engaging in sexual relationships. Quite a few public awareness campaigns have been developed to encourage parents to ask their teens whether or not they are using drugs and having sex as a way to deter drug use and the unwanted consequences of sex. Of course, some parents who have been bold enough to ask their teens whether or not they were engaging in sexual relations may have found teens reluctant to have an honest discussion sexual experience. Some teens will undoubtedly hide their experience in an attempt to avoid a lecture or to gain parental approval.

Still other parents may report that they believe that their teens are not sexually active because they choose to ignore teen sexual activity. Couch (1967) suggested that many parents are unable to cope with the idea of their children growing up, and teen sexual activity is one significant indicator of child development. As such, parents disregard clues of sexual activity.

Furstenberg et al. (1984) suggested that because parents are incapable of controlling their child's behavior, it is in the parent's best interest to remain misinformed. Not having knowledge of the teen's involvement in sexual endeavors frees parents from sexual responsibility. This may provide yet another explanation for why so many parents believed that their teens were virgins.

Contribution to the Structural-Functionalist Perspective

The findings of this study suggest that not all parents are involved in the sexual socialization of their children. Parental beliefs serve to predict which parents will be

involved in fulfilling the societal prerequisite or function of socialization. Support is provided for Aberle's suggestion that apathy is a significant contributor to the decline in the family's fulfillment of its functions.

The current study reveals that parents who believe that their children are able to get sexual information from other sources are less likely to discuss sexual issues with them. These parents perceive a minimal benefit in initiating sexual discussions with their children and are unmotivated to discuss such issues. This illustrates the idea put forth by many sociologists that the functions fulfilled by American families are on the decline as other social institutions become major players in the sexual socialization of youth. These other agents include the media, health care providers, schools, and peers.

The mass media, which includes television, music, magazines, movies, and the Internet, serve as a primary agent of sexual socialization for contemporary youth . A study of more than 1,500 adolescents aged 12 to 18 revealed that 32% of girls and 36% of boys believe that the media encourage teen sexual activity by projecting images which suggest that teen sex is normal (Clark et al., 1997). While more than 25% of adolescents' top ten television shows contain sexual content (Ward, 1995), only 1 in 11 of these programs mention sexual risks or responsibilities (Brown & Keller, 2000). Indeed, adolescent beliefs and values are affected by such programming. One study found that females who viewed more hours of music videos and prime-time programming were more likely to endorse notions that females are sex objects, males are sex driven, and that dating is a game (Ward, 2000).

Schools also serve as a significant agent of sexual socialization. According to a 1999 survey of public school district superintendents, two-thirds of all school districts

have a district-wide policy to teach sexuality education. However, the messages sent in these programs vary by locale. Only 14% have a comprehensive sex-education policy, 51% have an abstinence-plus policy (where abstinence is the preferred option, but contraception is discussed as an effective means of protecting against disease and unintended pregnancy), and 35% have an abstinence-only policy (where abstinence is the only option and discussion of contraception is prohibited, unless it is to emphasize its shortcomings). The values transmitted to the student through such programs may not be those of the parent.

Similarly, health care practitioners are greatly involved in the sexual socialization of youth. Teens identify physicians as dependable, educated adults who provide valuable information, particularly advice about avoiding pregnancy and STDs. Yet, parents are many times left out of physician-child discussions about sex. Parental notification or consent is not required in any state or the District of Columbia when providing contraceptive services, prenatal care, or treatment for HIV infection or other STDs. Only 26 states specifically require parental involvement in abortion, and 22 have no laws addressing the matter (Clark, 1999).

Peers are the most common agent of teen sexual socialization (Sanders & Mullis, 1988). When teens serve as one another's teachers, counselors, role models and judges, their norms and values are developed and exchanged. Often, though, the sexual socialization offered by peers counters parental norms and values. Even more, youth tend to overstate their sexual experiences to their peers, appearing to be more experienced and knowledgeable about sex than they really are (Strong & Devalut, 2001). Unfortunately, when adolescents believe that their friends are sexually active, they are more likely to

engage in sexual activities (Brooks-Gunn & Furstenberg, 1989). According to Peter Finn, peer education takes place "constantly among youngsters and adults regardless of instructional efforts to promote the use of more 'reliable sources of information and advice" (Finn, 1981, p. 13). While informal peer education continues, since 1957 formal peer education programs have been widely used in educational settings from elementary schools to universities to help shape the sexual behavior of youth (Sawyer et al., 1997). The bottom line is that when parents feel that they are not needed as a primary agent of sexual socialization, they are less likely to discuss issues with their teens. Perhaps, some parents are experiencing role ambivalence about what their responsibilities are as parents with regards to socialization.

Health Belief Model Implications

This study suggests that the Health Belief Model is a useful predictor of parent-teen discussions of sexual issues. Past studies have demonstrated that the Health Belief Model is predictive of health screenings, drug use, exercise, diet, vaccinations, breast-self-exams, contraceptive use, dental behaviors, antihypertensive regimes, diabetic regimens, renal disease regimens, parental compliance with regimen's for a child's condition, physician visits, sexual behavior, and seat-belt use (Becker et al., 1977; Bennett & Bozionelos, 2000; Harrison et al., 1992; Janz & Becker, 1984; Mattson, 1999; Manfredi & Lacey 1998; Sheeran & Abraham, 1996). The findings of this study serve to augment the list of behaviors that the Health Belief Model predicts.

The constructs of the Health Belief Model are significant predictors of parents taking a health-preventive action (sexual communication) on behalf of their offspring. This finding is significant to the expansion of the theory's predictive power as it suggests

that a more abstract interpretation of the theory can explain health-preventive behavior taken on behalf of another individual. Past studies have typically applied the health belief model to individuals taking health protective behavior for their own benefit. Future research may apply this model to behaviors taken on behalf of others. Dyads of interest may include the parent/child, the caregiver/care-receiver, and even the spouse/spouse.

This study also demonstrated that the Health Belief Model is useful in predicting the behavior of racial and ethnic minorities. Past studies have pointed to the weakness of the model with various groups because of its' focus on the individual. Perhaps, the model's power in predicting the behavior of members of ethnic groups is expanded when it is applied to behaviors taken on behalf of others. Future studies must explore this topic.

Policy Implications

Policy is defined as "any plan or course of action adopted by an organization, designed to influence and determine decisions, actions and other matters" (Kolbe, 1988, 390). Three types of policies may be influenced by the present study: those that require sexual communication, those that mandate resources for sexual communication, and those that indirectly facilitate parent-teen communication about sexual issues.

Requiring Sexual Communication

First, the findings of this study may be used to develop policies that require parent-teen communication about sexual issues. Because parents who feel that their teens would be uncomfortable discussing sexual issues are less likely to discuss such issues with their teens, public schools should require students to engage in sexual conversations with their parent/guardian for homework. Within the context of a comprehensive health curriculum from kindergarten to high school, students could write reports on such

conversations and be graded for content and grammar. Such weekly assignments, over the course of a student's academic career, would

- allow parents and their children to become more comfortable and less embarrassed in discussing sexual issues,
- provide parents with an opportunity to transmit their sexual values to their children
- increase parent-teen communication about sexual issues,
- begin sexual communication before the young person engages in sexual activity,
- increase parental involvement in their child's academic career,
- provide students with individualized parental attention, and
- ensure that sex is viewed as a topic appropriate for all ages.

Perhaps local advisory boards could be created to help create age-appropriate dialogue guides for parents and their children. Such boards would be made up of parents, educators, students, researchers, school board officials, health practitioners and religious leaders.

Another policy to require certain behavior concerns school boards. New policies might be enacted to require local school boards to inform parents of all the sexual issues that will not be covered by the school. Although most states require teaching about puberty, abstinence, and STDs, few states include information about masturbation, shared sexual behaviors, sexual identity and orientation, the pleasures of intimacy and sexual expression, or adult sexual roles and relationships (Haffner, 1996). By informing parents of the knowledge gaps that their children might face, parents may be more apt to take on the role of primary sexual socializer and engage their children in more sexual discussions. The findings of the current study suggests that parents who believe that they are the only source of information for their children are more likely to discuss sexual issues with their children. By outlining what children will not learn, parental beliefs about the need to hold sexual discussions with their teens will be augmented. Then, parents may be more willing

to help their children become responsible, sexually healthy adults through the required processes of sexual socialization.

Mandating Resources

A second type of policy implied by the findings of this study involves mandating resources for organizations to implement programs that promote parent-child communication about sexual issues. Local community centers (Boys and Girls Club, YMCA, etc) may be provided with funding to hire parent sex/health educators to provide parents with guidance in discussing sexual issues with their children. The findings of this study suggests that parents that feel most confident in their ability to have sexual discussions with their children are most likely to do so. As such, the teachers could focus on sharing factual information on human sexuality, helping with children's most frequently asked questions, role playing exercises to give parents practice, and providing media resources to parents. Such classes could be held to include or exclude children. The mandate and resources for such programs would underscore to parents the role that society needs them to fulfill as sexual socializer. Even more, it would also help to normalize parent-teen communication about sex by showing that it is expected that these discussions occur in all homes.

The current findings suggest that parents who perceive that their teens may be embarrassed by such discussions are less likely to discuss pregnancy, sexually transmitted diseases, sexual respect and sexual morality. In order to alter parent's beliefs about whether sexual discussions will embarrass children, parents should be presented with media images (via radio and television) which depict teenagers discussing sex intelligently and comfortably. Teens may be portrayed talking with teachers, counselors,

nurses, doctors, peers, potential sexual partners and parents. Perhaps exposure to such images will allow parents the opportunity to mentally place their adolescents in the role of the character and hence believe that sexual discussions are not so uncomfortable. According to the finding presented here, those parents who do not believe that their teens will be embarrassed will be more likely to have such discussions.

Another finding suggests that parents who believe that sexual communication provides teens with information that they might not otherwise get are more likely to discuss pregnancy, sexually transmitted diseases and sexual morality. Based on these findings, health education initiatives targeting parents might couch parent-teen communication about sex as a means to fill yet another teen need. Most parents see it as their job to prepare their teens to be successful members of society. They do this by providing food, clothing, shelter, love, and education. Campaigns that redefine sex education in the home as a basic necessity for good teen health may be effective in increasing parent-teen communication about sexual issues.

A further finding from the current research is that parents who believe that it is difficult to discuss sexual issues with their teens are less likely to talk about pregnancy, sexually transmitted diseases, respect and morality. Helping parents to overcome perceived difficulties by providing educational materials like videos and books is another implication. The difficulty factor may be minimized if parents have resources that can be used with the child to make discussions easier. For instance, to initiate such discussions, parents and teens may watch a video together or read a booklet together, which is followed by discussion questions for both to answer. Having access to such resources may reduce parent perceptions of the difficulty of such conversations and in turn increase

levels of parent-teen communication about sexual issues. Even more, providing parenting classes on leading family sexual discussions may also prove effective. In such a setting, parents may have the opportunity to learn basic facts about sexuality and even role-play discussion scenarios. This may increase parental confidence and knowledge. In turn, rates of parent-teen communication about sexual issues may increase.

The research findings also suggests that parents who believe that their teens are sexually active are more likely to discuss pregnancy, sexually transmitted diseases, sexual respect and sexual morality with their teens. While most parents report believing that their teens are not sexually active, public health initiatives must alert parents to the probabilities that their teens are indeed sexually active. Media campaigns should increase parental doubt about their teen's status as a virgin. The findings of the current study predict that those parents who believe that their teens are sexually active will be more likely to discuss such issues with their teens.

Indirect Facilitation

A third type of policy implicated by this involves the indirect facilitation of parent-teen communication about sexual issues. Agencies that offer services to parents and their children (public assistance agencies, pediatricians, publicly funded camps) may be required to inform parents about the rates of teen sexual activity and the consequences of such activity. The findings of the present study suggest that parents who believe that their children are sexually active are more likely to discuss sexual issues with their teens. By providing parents with facts and figures on the likelihood of teen sexual activity, their beliefs about children's sexual activity and sexual risk may be altered. Messages can be conveyed in agencies that serve parents by displaying pamphlets, posters, or videos on

adolescent sexuality. Such agencies might also have clients complete questionnaires that address teen sexual health, sexual activity and sexual communication. Clients will recognize that teens are sexually active and susceptible to the unwanted consequences of such activity.

The most radical policy implied by this research concerns the parents' right movement. The parents' rights movement is concerned with providing parents with the right to direct and control the upbringing, educational, values and discipline of their children (Donovan, 1999).Although Colorado voters rejected a parent's right amendment to their state constitution, such changes may serve to solidify the parent's responsibility. A major function of the family is to provide its members with the skills and values that are needed to be a successful member of society. Amendments that place the ball in the metaphorical court of the parents would minimize the role of schools and government in child socialization.

This project provides support for actions recently taken by the United Nations. The Joint United Nations Programme on HIV/AIDS suggested parent-child communication about sexual issues as one of the main strategies for preventing HIV/AIDS. According to Peter Piot, the organization's Executive Director, "Reaching out to children and young people is the most promising strategy for reducing the spread of HIV (Joint United Nations Programme on HIV/AIDS, 2000, p. 1). In this vein, the UN has funded television shows, radio programs and parent-education programs in an effort to launch parent-child dialogue about sex and AIDS. The current research project identified several parental beliefs that predict discussion about sexual issues. Because parental beliefs are alterable, UN efforts might focus on strategies to decrease parental

perceptions of barrier while increasing parental perceptions of benefit, efficacy and teen susceptibility.

Limitations

Several limitations emerged in the analysis. The first is in the wording of the questions asked of respondents. Several measures queried respondents about separate issues within one question. As such, the questions are not very reliable because they leave the researcher wondering which question the respondent addressed in his/her response. To begin, the question used to measure parental perceptions of the benefit involved in discussing sexual issues asked the parent to agree or disagree with statement below.

> "(NAME) will get the information somewhere else, so you don't really need to talk to (him/her) about sex and birth control."

This one question is actually asking the parent several things.

- Does the parent need to talk to the child about sex?
- Does the parent need to talk to the child about birth control?
- Is the child able to get information about sex elsewhere?
- Is the child able to get information about birth control elsewhere?
- Is the reason for talking to the child about sex a result of the child's access to information about sex?
- Is the reason for talking to the child about sex a result of the child's access to information about birth control?

Certainly, all of these questions may represent valid indicators of a benefit, which is operationally defined as gains that result from parent-teen sexual dialogue. However, this question lacks reliability. Most respondents will not interpret it the same way.

Likewise, in the question used to measure barrier, parents were asked to agree or disagree with the following statement:

> It would embarrass (TEEN) to talk to you about sex and birth control.

Embedded in this question is whether the teen would be embarrassed to discuss sex and whether the teen would be embarrassed to discuss birth control. While the two issues are related, they are not one in the same. Certainly, some parents would perceive that their teens would be taken aback by discussions of sex, but not birth control. By the same token, it is feasible that some parents might believe that their teens would be ashamed to discuss birth control, but not sex. Either way, this question is also unreliable. Future studies must employ more reliable measures of the study variables.

Similarly, in the question used to measure efficacy, parents were asked to agree or disagree with the following statement:

> It would be difficult for you to explain things if you talked with (NAME) about sex and birth control.

Again, this measure is asking about sex and birth control. Indeed, some parents may feel that they would have difficulty discussing sex, but not birth control and vice versa. Indeed, birth control may even be considered a subtopic within sex, That is, one would definitely discuss sex when talking about birth control, but not necessarily discuss birth control when discussing sex.

Another limitation is that the sample did not include the parents of out-of-school students. Since school drop-out rates increase with grade level, the in-school survey method used in the Add Health data set is less representative of the parents of children at higher grade levels. Research suggests that family communication patterns are

significantly different for teens that are in-school and those that are out-of-school (Holtzman & Rubinson, 1995). The results of this research may not be applicable to the parents of teens that have dropped out of school.

Finally, the parents in the Add Health study were not interviewed in a longitudinal fashion, causation cannot be inferred. Only association has been determined. Future researchers are advised to use a longitudinal research design to examine the causes of parent-teen communication about sexual issues.

Implications for New Areas of Study and Investigation

This research provides some indicator of the liberalization of American sexual standards. The fact that 20% of the respondents had never discussed the negative or bad impact of teen sexual activity on a teen's social suggests that contemporary parents may not be as concerned about a stigma attached to teen sexuality as in previous decades. This is further indicated by the finding that 12% of the respondents had not discussed the moral issues of not having sexual intercourse. Research comparing contemporary parenting attitudes to those in the 1970s and 1980s is needed.

This study focused on conversations about prophylactic sex education. That is, parents were asked about their discussions on the prevention of the undesirable consequences of sexual activity. While prevention topics are an important part of sexual socialization, sex positive communication should also be discussed. Sex positive communication deals with the pleasures and joys of sexual relationships (Hedgepeth & Helmich, 1996).

As is expected with most research projects, more questions are developed than answered. The following additional issues are identified for further study.

- Would more reliable measures of barrier, benefit, and efficacy strengthen the ability of the Health Belief Model to predict parent-teen communication about sexual issues?
- Would a more valid measure of severity strengthen the predictive validity of the Health Belief Model in predicting parent-teen communication about sexual issues?
- Can the Health Belief Model be expanded to explain the actions taken by caregivers, spouses and other family members to promote the health of significant others?
- Is the Health Belief Model more applicable to ethnic and racial minorities when it considers a behavior taken on behalf of the other?
- What is the causal relationship between health beliefs and parent-teen communication about sexual issues?
- What differences exist in the communication about sexual issues among in-school teens and their parents when compared to drop-out teens and their parents?
-

Summary

In conclusion, several valuable contributions have been made to the limited body of knowledge about parent-teen communication about sexual issues. First, quantitative data on the prevalence of parent-teen communication about specific sexual topics has been added. Second, variables significantly related to parent-teen communication about pregnancy, sexually transmitted disease, respect and morality have been identified., Also, the explanatory power of the Health Belief Model has been expanded to explain parent-teen communication about sexual issues. Finally, the generality of the Health Belief Model has been broadened to explain the health preventive behavior taken by a parent on behalf of their children.

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BIOGRAPHICAL SKETCH

Naima Cherie Brown Smith was born in Philadelphia, Pennsylvania, on December 27, 1972. She graduated in the 249th class of Central High School, the second oldest public school in the United States. She attended Florida A & M University in Tallahassee, Florida, where she received her B.S degree in sociology in 1995. She received an American Sociological Association/NIMH fellowship and chose to attend the University of Florida in Gainesville where she received the M.A. degree in sociology. Immediately after graduation, she entered the doctoral program at the University of Florida with a major concentration in family. While still enrolled at the University of Florida, she was hired as an assistant professor at Santa Fe Community College. She has held that position since 2000.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Charles W. Peek IV
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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Sandra Fields Seymour
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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Hernán Vera
Professor of Sociology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This dissertation was submitted to the Graduate Faculty of the Department of Sociology in the College of Liberal Arts and Sciences and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of or Doctor of Philosophy.

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